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Supporting online purchases by analysing and organising customer reviews

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Supporting Online Purchases By Analysing and Organising Customer Reviews

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DECLARATION

I declare that the work in this dissertation was carried out in accordance with the regulation of Coventry University. The work is original, except where indicated by special reference in the text, and no part of the dissertation has been submitted for any other academic award. Any views expressed in the thesis are those of the author.

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Publications

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To Adam, Maryam, Mama, Mummy, Ayah and Daddy

Thank you for the love and encouragement

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Table of Contents

Table of Figures

List of Tables

Abstract

Online customer reviews play an important role in supporting online shoppers in researching products and making purchase decisions. The majority of online shoppers read customer reviews as an important reference in online shopping. However, traditionally, while reviews can be sorted by recency or star rating, the online shopper is presented with a long list of reviews to read through to find those they might find useful. In response, Tesco, Mothercare, Nike and others have recently introduced improvements to their online customer reviews systems. In Nike's customer reviews system, there are breakdowns of details and star ratings across four dimensions; Size, Comfort, Fit and Durability. By adding dimensions these oblige reviewers to address issues of supposed relevance to shoppers who can attend to one or other depending on their priority. While such an approach can improve the value of reviews and the ability to access information, the decision on what the content should be and how it should be presented is not sourced from user studies. This thesis builds on recent innovation by taking a user-centred approach which attempts to establish options of the best ways of producing, organising and viewing reviews through user studies.

To this end, an ethnographically-informed observation methodology is chosen to carry out this research. This work revealed that users think about online shopping in terms of dimensions including value for money, functionality, customer service and so on. These dimensions, presented in [Chapter 6], were produced through coding and analysis of user videos and interviews, validated through inter-rater correlation coefficients. These same dimensions can be used as tags for reviews, which can be attached by users. This concept was developed as a high fidelity demonstrator and evaluated in both attitude and actual-use forms within the Technology Acceptance Model evaluation framework. The work shows that a tagging approach to review production and organisation is a useful and easily implemented hence directing the user to the relevant information that they seek for and need without the same old common hassle – the longer search time.

Chapter 1

Introduction

1.1 Introduction

The emerging of today's businesses, either small, medium or big companies to involve in e-commerce has provided comprehensive options for people to shop online. For the past 30 years, there have been many products from clothing to high-tech stuff sold on the Web. Recently, big-name grocery retailers such as Tesco, Asda and Morrison already have started selling their grocery products online. This current state of e-commerce has driven more people buying products online due to the variety of products available (Ding *et al,.*2008). Regardless of the current condition of downturn in world economics, this e-commerce activity appears to be rapidly expanding (Hu *et al,.*2010) However, although many companies have entered the e-commerce world, very few have been able to sustain and there are still several companies which have gone bankrupt due to failure in attaining competitive advantage (Ahmad 2002).

Huang (2008), has shown that due to a more slow-growth of economies and industries, major global competition and highly demanding consumers, many businesses are looking for developing new strategies to achieve, sustain and maintain a competitive advantage which is the customer and its value. Since the customer is the primary concern in the e-commerce business, their values play an essential role as the key performance indicator and key improvement indicator as well (Setijono 2007). The need for monitoring and listening to the customers' voice has become a core practice in enhancing and maintaining a high level of customer satisfaction in e-commerce business (Choi *et al,.*2008).

Today's e-commerce systems are seen as being engaged with technological development, especially on the Web features that assist consumers. Technological assistance features such as recommender systems, customer reviews, and social networks through Web 2.0 have aided people in online purchasing activity. The way it helps to simplify the purchasing process is by offering convenience to customers in product information search, options evaluation, and making purchasing decisions (Constantinides 2004).

The scenario could be seen where e-commerce is experiencing the development of Web 2.0 competencies in which enhancing the customers' involvement and interactions online (Huang *et al,.* 2012), and that made the Web as an excellent source for gathering the consumer opinions (Hu *et al,.* 2006). The facility enables the consumers to interact with each other, review and rate products and also spread electronic word of mouth (e-WOM) (Karimi 2013) through numerous channels such as in blogs, discussion groups, forums (Hu *et al,.* 2006). Nevertheless, that significantly shows the communication and interaction among the consumers are crucial, and one of the excellent media is through the online customer review sections (Jones and Leonard 2008). The customer reviews section is a place where the online shoppers willingly share their experiences, reactions, opinions and suggestions about products purchased and services obtained online (Lee 2007). As to support the online shopping experience, the common practice applied by many of today's retailers is enabling their customers to write reviews for products that they have purchased. Through this review writing, the consumers can share and exchange their opinions, experiences and evaluations of product and services with other prospective customers (Ding *et al,.* 2008).

1.2 Online Customer Reviews are Important to Online Shoppers

Online shoppers are likely to seek more product information by referring to comments and recommendations from other customers in their online shopping activity (Chen 2012). The online customer reviews in e-commerce system are appealed as necessary as evidenced and proven by many findings in various studies and surveys from both formal (academics) and informal (commercial) sources. Based on a survey conducted by CompUSA-iPerceptions in 2006, 81% of the online shoppers viewed customer reviews and ratings as essential when they are planning for purchasing, and another 63% of customers in another study showed that they were more likely to purchase from a shopping website that has product ratings and reviews (iPerceptions 2006). That is because the online reviews system provides loads of useful and valuable information about products and services sold online and this ultimately aids the online shoppers in many fronts when making an online purchasing decision (Lappas *et al,.* 2012).

Since customer reviews are an essential kind of user-generated content in an e-commerce system, the information conveyed is crucial to help other people make informed buying decisions (Liu *et al,.* 2011).

In one of a few recent market surveys, 90 % of online shoppers' buying decisions are influenced by the online customer reviews ("2013 Survey: 90% Of Customers Say Buying Decisions Are Influenced by Online Reviews"). The findings of the market survey indicate that customer reviews are essential to the online shopper as well as an influence in the decision-making process. Further, online customer reviews are also relevant as a factor that influences and boosts sales volume and business growth (Chou 2012). Hence, not only to the customers, but online reviews are also critical to the sellers or businesses as well.

The importance of customer reviews is not limited to its role as a platform for customers to build trust, passing information, aiding decision-making process and as sales booster to online businesses, but also its recognition as being a highly fruitful information source in enhancing and monitoring the customer satisfaction in online business market (Kang and Park 2014). That is because, in customer reviews, they provide information that represents the customers' minds and often, the reviews provided are believed to be valid and reliable as people write or give reviews voluntarily. Henceforth, the online businesses could gain more knowledge about their customers and could know them better with this low-effort technique of understanding the customers' minds.

1.3 Current Views of Organisation and Presentation of Online Customer Reviews System

There are different types of view on the organisation and presentation of online customer reviews displayed on online shopping websites. The popular customer review system which many online shoppers selected as a personal reference is Amazon customer reviews, whom among one of the online stores that allow the user to post product reviews started in 1995 (Mudambi and Schuff 2010). As to cope with Amazon's popularity on its customer reviews system, many other online stores appointed some of the popular online customer reviews systems providers such as Baazarvoice, Feefo, Powerreviews, Reviews.co.uk, Review and Reevo.

Those online review developers provide a system package maintaining, organising and managing the customers' reviews about products or services and present them on various attractive interfaces which are user-friendly, easy-to-navigate and function well. A lot of online businesses who engaged with those online reviews have testified their satisfaction when using these services when managing their customers' reviews towards their products as revealed on the clients' testimonials section on those review providers' websites. The following Figure 1 is an example of the current online customer reviews system available on some popular online merchant stores.

20

Figure 1: The Online Customer Reviews on Amazon's website

Above shows the screenshot of an example of an online customer reviews system in Amazon's UK website where it contains and displays the consumers' reviews about products they bought from the Amazon UK store. The system shows that it has customer ratings and reviews. Besides, the system equipped with other system functions such as 'Write a review', 'Rate this item' and some different presentation preferences menu such as 'Sort by', 'Filter by' and 'Keywords Search' functions to allow the users to sort, organise and display the reviews according to their preferences.

The next Figure 2 shows an example of an online customer reviews system by a system provider named Reevo. Reevo has engaged with several of other large online merchants such as Mothercare, Tesco, British Airways, eBuyer, Hyundai, Nissan and others, to manage their consumer reviews. Looking at the presentation of reviews in Reevo's system, it spots some differences from Amazon or other merchants in the way reviews are displayed.

In Reevo's system, the reviews are presented under two significant classes; Positive and Negative, which marked by symbols in red and green colour respectively.
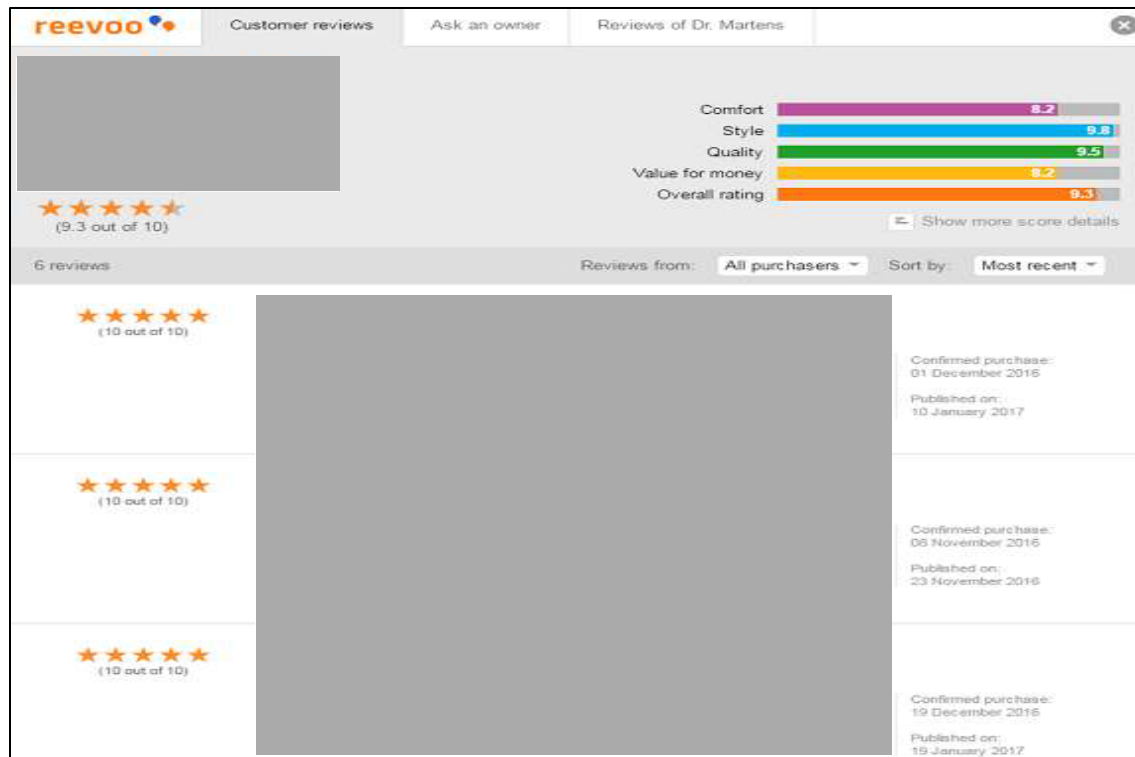
Figure 2: The Online Customer Reviews System on the Dr Martens' website

The designs of this reviews system interface is the same for all their clients' websites except for the 'tags' features. The tags feature displays ratings by the customer based on the elements displayed. For example, in Dr Martens' product, the elements of the tag used are Comfort, Style, and Value for Money, Quality and Overall Rating. The consumers who put reviews have to rate the tags as well, and the rating tags display a visual summary of people's vote on their products' overall quality.

Those tags features are not available in Amazon's customer reviews system, and thus, Reevo has made a significant difference by providing tags on its system to display a summarising evaluation of the product by the consumers. The next example in the Figure 3 below is the customer reviews system by Nike online store. The system has similar features with Reevo's customer reviews' system where it has rating tags namely Size, Comfort, Fit and Durability to allow the user to give an evaluation on those four essential elements in Nike's products (mainly sport shoes). Other features embedded are some standard options for selecting reviews display by recency, helpfulness vote and rating scores which are available in all online customer reviews systems.
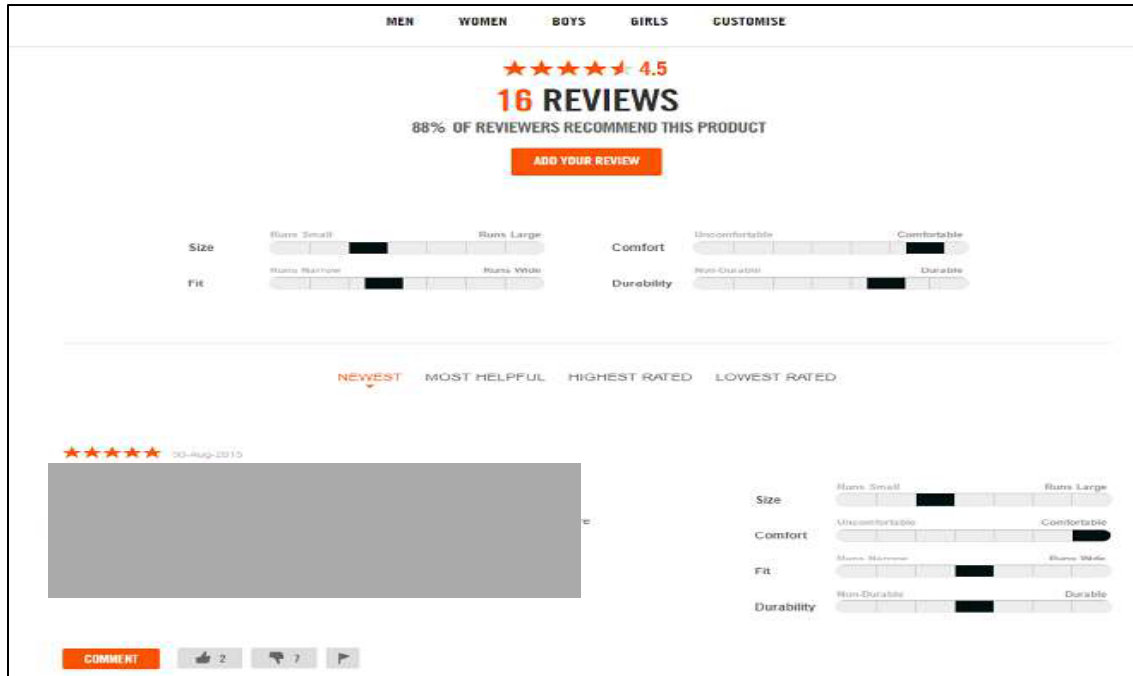
Figure 3 The Online Customer Reviews System on Nike's website

These three screenshots of the latest and updated online customer reviews systems are from some of the big-name online stores which have millions of customers as users worldwide. Those screenshots are meant to illustrate some of the examples of current interface design, system concepts, and features embedded in the customer review systems available online. Based on the patterns, each system has its strengths and styles on presenting reviews to their existing and potential customers. The way each system presents the supporting attributes such as the tags, review sorting options, and customer rating scores are exciting in their ways and distinctive to each other. The next two figures (figure 4 and figure 5), show screenshots of online customer review system interfaces and features on two accessible tourism or service-based commercial websites.
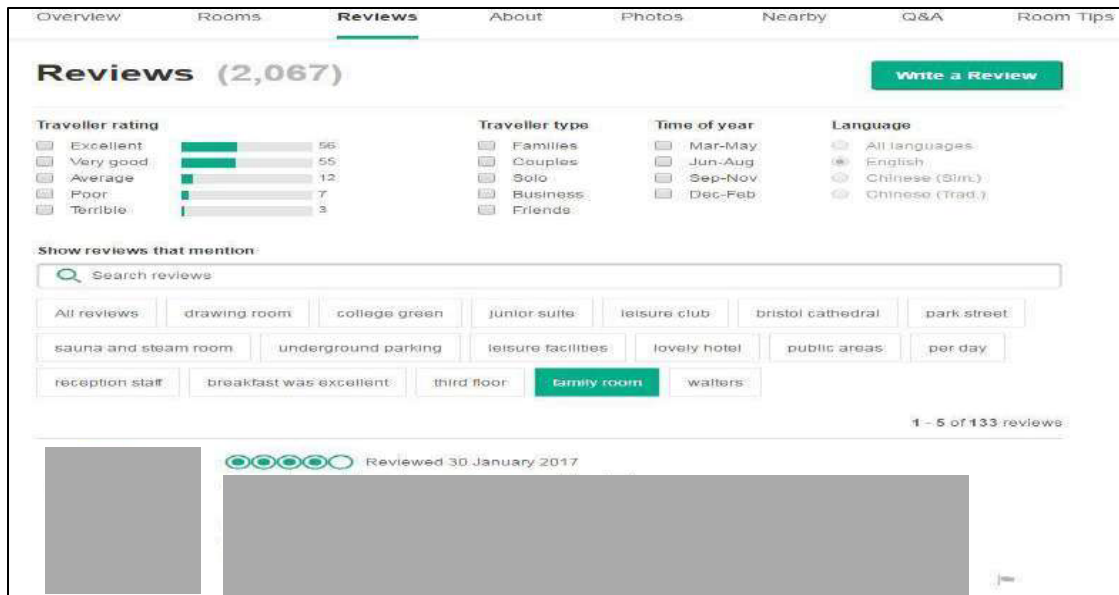
Figure 4: The Online Customer Reviews System on the Trip Advisor website
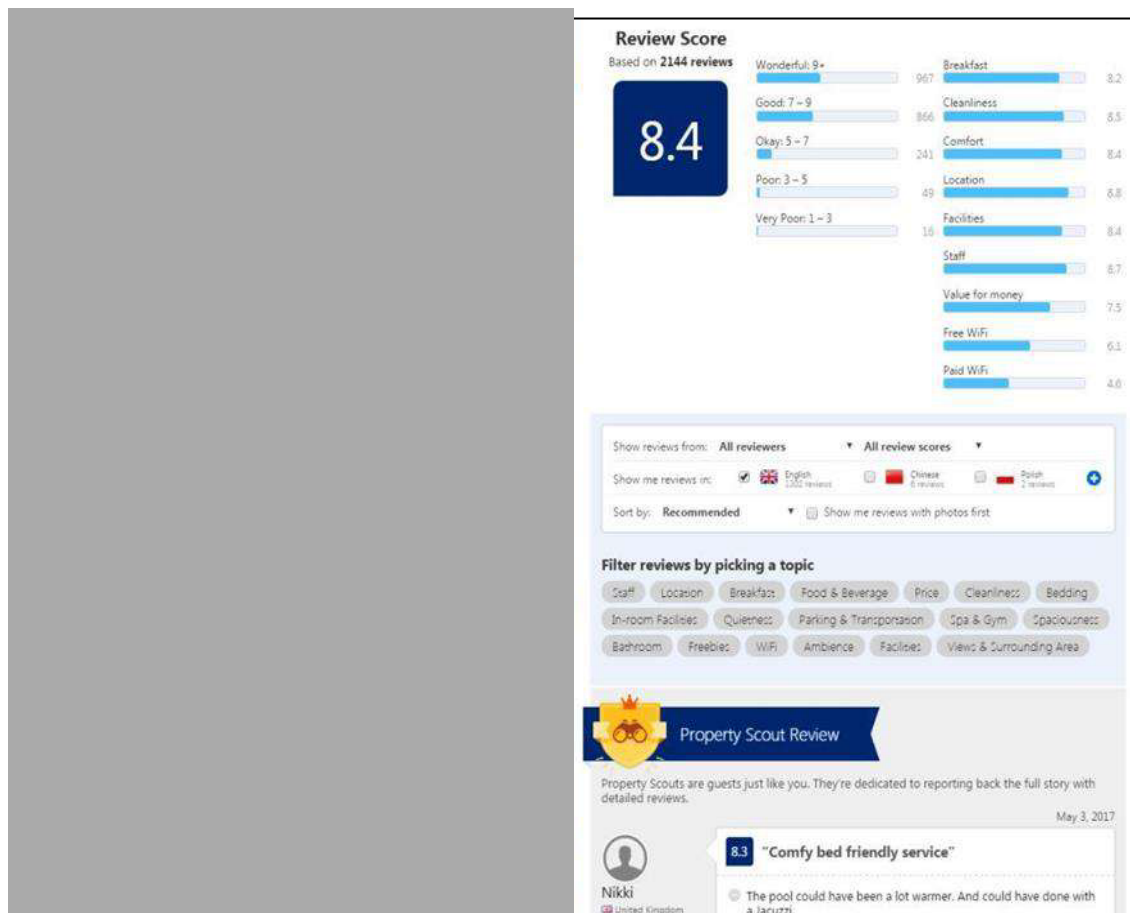
Figure 5: The Online Customer Reviews System on Booking.com website

The screenshots of these online customer review systems show that some companies tried to be distinctive by adding tags or keyword search options to aid the customers in finding information and make a judgement on their products. However, the structure of the written reviews remains the same except for the online review system by Reevo, where the written reviews are displayed in two main categories; positive and negative comments. This part had ringed the attention and motivation for this study to develop research about presenting and organising the written online customer reviews.

1.4 The Research Gap

The gap discovered from the previous studies of online customer reviews is the need for more empirical research about systems that organise the scope of review's content and how they aid the user to find relevant reviews. That is research which covers the practical aspect of online customer review study.

The needs addressed since the existence of online review studies have mostly covered the technical aspects such as review mining and summarisation, and the psychological points such as impact and the importance of online reviews to online shoppers, but less on the practical elements such as the concept of utilising the online reviews system.

1.5 Research Motivation

Online shoppers are getting more sophisticated every day. Their expectations change at lightning pace and they prefer an online shopping experience that is customised to their changing needs (Gosek 2010). The competitive economic environment has driven many organisations to continuously improve business performance to survive in a dynamic and challenging business world (Vesna *et al.* 2000).

One of the actions taken by businesses involves e-commerce. According to Sperka and Slalinova (2012), an opportunity for improvement in e-commerce is the competitiveness factor. Hence, many e-commerce have deployed various advanced technological applications to adapt to swift changes in the online business world. The Decision Support System (DSS) based applications or systems applied in the e-commerce is an example of an advanced technological application which is defined as the enhancement of capability to decide consumers done by any computer application.

The deployment of DSS has improved e-commerce, mostly regarding customer satisfaction (Sperka and Slalinova 2012). The online customer review system is an example of DSS which is widely used by e-commerce sites these days such as Amazon and eBay.

As the volume of online transactions is experiencing explosive growth, there is an increasing need for the development of intelligent tools to support and improve the sophistication and automation level in e-commerce systems (Lau and Raymond 2007). For example, the product recommendation system which is still very popular, remains active, and is used on Amazon, eBay, Levis, moviefinder.com and many more online retailers' sites. The system works by suggesting to the customers what products to buy and what other complementary products are related and relevant. The recommendations made are based on demographic information about the buyers, analysis of the past purchase behaviours and based on top sellers or top products sold off the sites (Schafer *et al.* 1999). However, the related and relevance-based recommendation system only works for product selection but does not apply to the customer reviews.

According to Chaxel *et al.* (2013), people have predefined preferences that they look for while skimming or reading customer reviews. In other words, users are trying to find relevant product information to match with what they wanted and needed to know. As seen at this very moment, the popularity of e-commerce is growing, and this situation has driven the rapid growth of the number of customer reviews for products in online commercial stores (Hu and Wu 2009). Seemingly, the rapid growth of reviews has made it impossible for the user to select what kind of information they want to know from customer reviews when there is a vast body of reviews even for a single item (Lappas *et al.* 2012).

Today's businesses live with web-enabled technologies where a bunch of information can be provided to aid potential buyers or decision-makers. However, if that information is not adequately filtered and processed, it might cause information overload for the decision-maker (Sperka and Slalinova 2012). Online shoppers are well aware of this issue as they have seen the overabundance of product reviews online. It is there to assist the online shoppers, but due to the excessive amount, people often reach and attend selectively to product information from a set of reviews. The selection of the reviews has affected their understanding, judgement and, finally, the choice of product they wanted to buy as they could not reach all information from the vast amount of reviews. This situation will most probably cause the prospective buyers to have a biased

understanding and judgement of the product, whereas customer reviews shall ideally help customers to develop an unbiased understanding and judgement of products (Liu *et al.* 2011).

When users experience information overload, they prefer to limit the information sources which later leads them to a biased understanding of the product as a result of inadequate information gathering. There are many empirical research studies conducted on managing the presentation and organisation of information in customer reviews. A study from Hu and Bing (2004), was about summarising opinions of most mentioned product features and how it is useful to assist shoppers in making product judgement. Then came Hang's (*et al.* 2005) study that segmented customer reviews into two major types: positive reviews and negative reviews, and it promotes a simple filtration concept of reviews. Next was the Soo *et al.* (2006) study on assessing the review's helpfulness level to aid customers in identifying which reviewers have given good reviews about a product. There were loads of previous studies on customer reviews and those three mentioned above are the examples of varied basic concepts used in organising and analysing the review contents. Since the study of customer reviews are always up for scholars to further explore, it has opened up opportunities for more research in the area. Research on retrieving relevant information from customer reviews remains challenging: hence the research opportunities. This study intends to take this challenge to explore a range of ways for possibly better organising and presenting customer reviews that fit an individual's information preferences.

Driven by the research gap found, the current state and limitations on the organisation view of online customer reviews system in commercial sites, the existence of predefined preferences in information search process and awareness of the information overload issues among users, this study intended to grasp this opportunity to explore various means of organising the customer reviews.

As previously mentioned, there is a lack of empirical studies that discuss ways the online customer reviews could be effectively analysed and developed for better organisation and presentation. Hence, this research endeavours to fill the gap by studying, understanding and exploring the alternative concepts for managing the information available from online customer reviews. This study has found an opportunity to explore generalising an existing concept into a new domain; applying the review's content filter concept found on service-based websites onto product-based shopping websites.

This study believes that online shoppers could obtain and collect more valuable product information that better fits their personal preferences and needs without the hassle of going through bunches of reviews by providing an improved presentation of customer reviews. As claimed by Mudambi and Schuff (2010), providing easy access to reviews could encourage good quality of customer reviews. Furthermore, the customers are expecting that the customer reviews system should be presented in a way that could support them in constructing evaluative criteria for products in their online shopping process (Kailer *et al.* 2014). The presentation design of the customer reviews shall also consider aiding online shoppers to reduce the cognitive cost involved during the information searching process (Lappas *et al.* 2012). Hence, the research on developing a new system concept for organising the online customer reviews system seems relevant to provide an information processing platform that understands consumer buying behaviour while assisting in the decision-making process. Additionally, the future proposed concept will emphasise assisting consumers to find reviews that are relevant to their information preferences or needs.

To pursue this motivation, this research intends to further examine and explore from the standpoint of the users (the online shoppers) themselves to find out how they use customer reviews during their online shopping activity and what kind of key information preferences they have when looking for information in customer reviews. The motivation for this research is also the trend of today's online shoppers' behaviours, which is always being influenced by customer reviews as claimed by commercial market and consumer survey studies and academic research and publications. Constructing a management concept on organising and retrieving systems is regarded as a remarkable way to overcome the problem of information overload in customer reviews (Miao *et al.* 2009).

1.6 The Research Question

How can analysing and organising customer reviews support the online purchasing experience?

1.7 Research Aims and Objectives

This research aims to investigate the key information dimensions in customer reviews and develop a conceptual prototype for analysing and organising customer reviews. To achieve these research aims, the following set of objectives were defined:

1) To conduct ethnographically-informed observation user studies to;

   • Understand the online shoppers' behaviours when using customer reviews.

   • Investigate the key information dimensions they referred to when using customer reviews.

2) To conduct a literature and technology review to analyse the current view of the organisation and presentation of online customer reviews.

3) To analyse user studies' data through data coding and inter-coder reliability to generate tags.

4) Based on user studies, to develop a conceptual prototype on organising and presenting customer reviews to provide proof of concept.

5) To evaluate users' attitude and actual use of the prototype to;

   • Ensure good usability.

   • Produce data about real use.

1.8 Research Methodology

The execution of the research objectives requires an approach to describe the relationship between the people's experiences, literature review and developed variables. For that reason, this research intends to use a mixed-method combining qualitative and quantitative approaches. Therefore, this study involves four significant phases. The stages of mixed methods used in this research are:

Phase 1: This research begins the journey by conducting a literature and technology review on the organisation and presentation of online customer reviews since the earlier stage of its employment in e-commerce. The target of the literature is to provide a base knowledge about a range of ways on what information technology and systems used, applied and proposed by previous studies on organising the online customer reviews and also to construct critiques on the shortcomings discovered. As for the technology review, it aimed at analysing the current view of the latest technology used in customer reviews systems available on some big brands online retailers and explored the opportunities on improving and implementing existing technology to a new domain.

Phase 2: The second phase involved a series of investigations through primary research or user studies focusing on exploring and understanding the online shoppers' behaviour toward using customer reviews and how its influence their online purchasing experience. The interview and observation were implemented to investigate further what are the key important dimensions of information that usually the online shoppers likely to refer to when using the online customer reviews. The methodology involved was on a qualitative data collection.

Phase 3: In the third phase, this research continued with a system prototype development on organising and presenting customer reviews. The prototype used the findings from the primary research in the second phase as its framework during the development phase. The goal of this phase was to illustrate and demonstrate the knowledge and idea developed from the primary research findings. The methodology used was a content analysis of qualitative data.

Phase 4: The final stage involved an evaluation of the prototype developed in step 3. The goal of this phase is to provide proof of concept quantitatively and qualitatively to support the system concept proposed and demonstrated in a conceptual prototype. A thorough analysis was carried out to interpret and discuss the feedback of the evaluation results from both quantitative and qualitative results data.

1.9 Chapters Synopses

This thesis is being organised and arranged in (9) chapters as detailed in the following;

1.9.1 Chapter 2: The Organisation and Presentation of Online Customer Reviews

This chapter puts the discussion on the timeline of the establishment and development of customer review systems. The timeframe covered was since the early years up to this date of use. The evolution of growth is understood, analysed and studied in depth to have a clear vision of the transition of changes that happened on online customer review systems in terms of its technological adoption. This stage involved extensive reading, understanding, reviewing and critiquing the literature about works, studies, and research done on customer review systems since the early times of its existence.

The literature also included the impacts of customer review systems for users and online shoppers and how it has influenced their purchasing behaviours. This chapter also involved a technology review of the current online customer review systems for the big name or top online retailers' websites. The methodology used was online, web-based, content literature review and analysis. This technology review is intended to observe, understand and analyse the scope, functions, system flow, features and interfaces of each customer review systems used in the popular online retailers' websites. The details explain how the strengths and weaknesses of each system were analysed to further understand the state of the current customer reviews available online in terms of information technologies adopted. A comparison analysis was executed as well as to provide a clear definition, differentiation and significance of each system compared to each other. This work aimed to figure out the adoption of information system technologies used to indicate and conform to what the literature reviews had described. The focus was to illustrate the definition, importance, developments, impacts and critiques on the management and organisation of the customer review systems.

1.9.2 Chapter 3: Research Methodology

This chapter consists of details of several methodologies to carry out this research. The differences of research approaches, methodology philosophies, data collection techniques and research strategies are explained thoroughly to support and clarify, with relevant rationales and detailed reasoning behind choosing the methodologies for this research. Besides, the role of the researcher and ethical considerations are deliberated upon in this chapter, too.

1.9.3 Chapter 4: The Exploratory Study and Technology Review

This chapter will discuss an exploratory study to develop the initial supports of research from real online shoppers. The study was designed to obtain the data regarding how vital the online customer reviews are, and how much of an influence they have toward the decision-making process in the online shopping activity. The study conducted a survey and interviews to gather data from participants. The result of this exploratory study will be used to support the need to further the investigation of the designed primary research (which will be elaborated more in Chapter 5). The technology review was meant to give and expose this research about the current view, organisation and presentation of the customer reviews system that was available on the online stores' websites. By having these two inputs – the exploratory study and technology review – aids the execution of the next stages of research: collecting data from the online shoppers.

1.9.4 Chapter 5: Primary Research

This chapter provides the details on how this study conducted its primary research, which consists of a series of consumer studies selecting and focusing on people who usually shop online. The primary research aims to explore and find out if customer reviews do involve the real-world scenario. This general exploration is intended to observe and analyse the application of customer reviews in online shopping activity through the experience of real-world online shoppers. Most importantly, this research was designed and aimed to understand the engagement between online shoppers and customer reviews throughout the online shopping process and investigate how online shoppers think and feel about using customer reviews. The methodological strategy chosen is ethnographically-informed observation, and this method allowed observations of natural behaviours of people in online shopping activity without being influenced by the researcher's watch.

1.9.5 Chapter 6: User Evaluation Phase 1

This chapter explained more about this study that involves the work on developing a conceptual prototype of customer reviews system. Following the requirement basis that obtained from the data analysis process done on the primary research data, it was used to develop a conceptual prototype. The development of the conceptual prototype is meant as the medium to illustrate and demonstrate the proposed new system concept on organising and presenting customer reviews. The methodology used at this stage is the user-driven development based system.

The outcome was expected to present a newly proposed system concept which improves the organisation and presentation of online customer review systems. The result also hoping to provide a better understanding of customer behaviour during online shopping based on customer review systems. This chapter also discusses the assessment process used on the developed conceptual prototype, mainly evaluating the proposed new system concept for organising and presenting customer reviews. The data collection method used to carry out this evaluation process is a questionnaire with a video demonstration. The reason for various evaluation tools was to provide both potential and actual data on the feedback of users towards using the new system concept. The evaluation framework used in this assessment process is the Technology Acceptance Model (TAM) and is used to validate the research and measure the level of user acceptance toward the proposed system concept. The evaluation's results were thoroughly analysed and discussed before concluding the findings as a whole. The validity and reliability of the assessment's results were also included to support the results of the quantitative-based user evaluation.

1.9.6: Chapter 7: User Evaluation Phase 2

In this chapter, the details are about the results of the evaluation phase 2 conducted as a further evaluation to support the results gathered in Chapter 6. The data collection method used here is an interview session held with the real online shoppers who involved in this evaluation. The difference between this evaluation and the previous evaluation is the mode of the prototype system used. In User Evaluation Phase 1, the prototype is on offline mode while in this User Evaluation Phase 2, the system is on online mode. The results and

findings are carefully examined, assessed and scientifically analysed to interpret the meanings. The framework used in this evaluation is still the Technology Acceptance Model, but the elements of the model used in the interview questions as the predefined themes.

1.9.7 Chapter 8: Discussion

This chapter is the discussion of the work done in this study. It will deliberately discuss the findings discovered. What else would this study do if given more research time and the opportunities for the future works that can be expanding from the outcomes of this study? Besides, there is a discussion on how this research has achieved and answered the research question.

.9.8 Chapter 9: Conclusion

This chapter summarises the overall work involved, and how every objective was met and fulfilled. There are highlights of the research contribution, the limitation and a summary to end the chapter.

Chapter 2

The Organisation and Presentation of Customer Reviews

2.1 Introduction

As the previous chapter has drawn the needs of this research, this chapter - a literature review - was conducted to situate the research gap into perspective by exploring, explaining, and revealing the current understanding of online shoppers' behaviour in terms of product information seeking and decision-making process which involved the scope of influence from the online customer reviews systems. The literature review starts with an overview of the online customer reviews, then the importance to the online shoppers as to how eventually it will influence their online purchasing experience and ends with the discussion on the organisation and presentation of customer reviews systems. Also, other supporting details such as the quality of customer reviews systems and details of presentation design principles are also included. At the end of the chapter, the literature gap will be presented to clearly explain the state of the research motivation and gap as the direction of this research.

2.2 The Overview of Online Customer Reviews

E-commerce is growing rapidly with an increasing number of commercial websites, and an acceptance of online shopping by consumers. Since e-commerce is becoming more popular, the number of customer reviews have grown rapidly (Park *et al.*2011). Another reason for the online reviews' growth is due to the extensiveness of internet facility (Barreto 2014). Consumers who shop online cannot touch or smell the products and therefore they must refer to product information obtainable from the site to make judgements before their purchases. Online sellers attempt to reduce this limitation by offering the consumers the chances to share product assessments online (Smith *et al.*2005). As the role of online customer reviews is likely as the offline reviews, it spreads information among users even on anonymity term, about the products and which yet, the reviews shared capable of helping on reducing the uncertainty and aids users during their purchasing decision making. Generally, online customer reviews can be defined as peer-generated product evaluations posted on a company or third-party websites which contain a product's overview from the users' standpoint (Dabholkar 2006). Today's online shoppers are not only browsing product

catalogues but also seeking sources to find out more information about products which they hope could help in easing their buying decision-making process. The online interactive facilities of Web 2.0 have enabled online shoppers to pursue their desire to compare prices of products and study some product. Hence, customer reviews can help online consumers obtain and collect valuable information on products which fit their personal preferences (Yang *et al.*2009).

According to Jmal and Faiz (2013), opinions on the web affect the customers' choices and decisions during online shopping activity; hence it becomes necessary for businesses to process the mixture of reviews in the providing appropriate forms. Most merchants who are selling products on the web often ask their consumers to write reviews for the products they have purchased. This information (created by consumers) seemed very helpful in making purchase decisions because the online customer reviews consist of new information written from the perspective of consumers who have bought and used the product. It includes their opinions, general evaluations, and personal experiences with the product (Mudambi and Schuff 2010).

he information provided through online customer reviews appears to be a new form of word-of-mouth communication (Park *et al.*2011). A customer review also improves the usefulness of a website where, indirectly, it is capable of attracting more consumer visits and creating 'stickiness' amongst the visitors. This scenario increases the time spent by consumers reading and browsing the website. Furthermore, according to Mudambi and Schuff (2010), it also triggered the consumers to create online communities as shoppers. Yang *et al.* (2009) agree that Web 2.0 facilities enable the community members to interact amongst themselves to share and contribute opinions. The product reviews written by the real buyers are often seen as important to develop a reputation of the seller as Brown (2012) claims that online reviews are also an influence on how local businesses work together, communicate, and interact with consumers by promoting communication and competition in new ways.

Park et.al. (2011), in a study of customer reviews, explained that there are a few indications of the customer reviews' advantages. Firstly, the traditional word-of-mouth review provides limited influence to a local social network, whereas the online customer review has an influence far beyond the local community because consumers could access the customer reviews on the internet at any time and from anywhere in the world. Secondly, the traditional word-of-mouth is not a seller's decision variable. On the other hand, online sellers can decide whether to offer online customer reviews on their website or not. An online seller can provide a license to the intermediaries for

managing the consumer reviews' section and choose (or not choose) to post reviews online. The online seller also can select only outstanding reviews to be posted on their website, thus encouraging the consumers' concentration on the reviews. Lastly, the sources of the information by traditional word-of-mouth are familiar or acquainted people (such as close friends and family members), while online consumer reviews come from anonymous and unknown previous purchasers. Hence, online reviews may have less credibility and trustworthiness than the direct messages from a consumer's family or friends because the authors are not people the consumers know.

However, to overcome the absence of credibility in online messages or reviews, it is important to look at the content of the reviews. When an online review looks logical and persuasive, the likeliness of the customer to trust it is high. In addition, if a great number of consumers recommend a product, other consumers, in response to their views, are likely to trust and earnestly believe the recommendations, having a favourable attitude about the product (Park *et al.* 2011).

2.3 Online Customer Reviews Support Online Purchasing Experience

Kim and Srivastava (2007) discussed that the buying decision-making process is frequently influenced by online customer reviews. The importance of online consumer reviews could be measured by how much it helps the consumers in developing an appropriately favourable expectation from the vendor (Gefen 2002).

Consumers are welcome and allowed to write and share their personal experiences by contributing to online review's writing, view and rate reviews from other users. Believing the real consumers' is usually frank and true, online customer reviews platform is actively used as a mean of information search source by the online shoppers.

The platform is worth being explored on its user-generated content where it's normally centred on subjective consumers' opinions and product evaluation on their own experiences (Poyry *et al,*.2012).

Kim and Srivastava (2007) again mentioned that normal behaviour of most online shoppers, with the purpose to reduce the risk of buying a new product, to track the reviews of previous purchasers or early adopters before making a decision to purchase. This approach seems like such a good technique in managing risk in online shopping to avoid post-purchase dissatisfaction. Hence, the

customer review which usually contained experiences and opinions of the previous buyers either it's positive or negative could be a good source for more product information.

There is an "adaptive decision-makers" type revealed by some previous studies on consumer decision-making processes. This type refers to the consumers who tried to adapt their strategy in decision making to specific tasks, purposes, and environments. The research also proposed that consumers always search for opinions from other buyers as a way of managing and handling the perceived risks which normally allied with cognitively demanding tasks in information-intensive environments. Another risk-reduction strategy is referencing word-of-mouth against other people's comments to strategically eliminate the uncomfortable feeling toward the exposure of risk when buying products. Rather than information about the product, consumers tend to depend on word-of-mouth information because the information is more intense, highly perceived as trustworthy, and also easier to use because it is other consumers' experiences as opposed to information provided by the marketer (Smith *et al.* 2005). The information in online word-of-mouth or customer reviews influences the online shoppers more than any other source of product information because they are based on real experiences and closely relevant to product purchasing needs (Ha and Hong-Youl 2002).

2.4 Online Consumer Behaviour Models

In traditional consumer behaviour, there are various sources of product information which enable and ease the consumer in making a purchasing decision as they can see, touch, feel and smell the product physically and at least assisted by the store sales assistants. Unlike the consumer who buys online, thy have limited assistance on getting more product information and knowledge and therefore, customers reviews play role as a reference. There are two models selected which relevant and related to the study; Lee's Model of Online Consumer Purchasing Behaviour and the Theory Model of Impact of Recommendations and Comments towards Online Purchasing Behaviour.

2.4.1 Lee's Model of Online Consumer Purchasing Behaviour (2002)

Lee's model (2002) is an online consumer purchasing model that is based on the categorisation of influencing factors and phases in online purchasing activity. This model does not imply the stages in the decision-making process like other behaviour models. Hence this model could be used as the general classification attributes covers the scope of

customer review and how they influence consumer behaviour. This model recognises three phases of online purchasing activity;

Phase 1: Building trust and confidence.

This first phase consumers will try to build trust and confidence in pursuing their online shopping activity. To do this, consumers seek sources able to provide sufficient product information. Usually there are product descriptions available on the website however it only covers the main and in general the features of product. Obviously, not enough to help consumers building trust and confidence and this is where customer review play role on providing additional information of products to support existing product descriptions and also to help consumers feel secured to purchase. The consumers are also able to make information cross-checking through customer reviews.

Phase 2: The online shopping experience

The second phase describes the act of purchasing by consumers. In this phase consumers will browse and search for products to purchase. Afterwards, consumers will engage in price comparison on the variety of product offerings on the websites. Besides, consumers are seeking for another kind of information too such as about buying experience with the sellers or websites and ease of use on the websites' attributes. Here comes again the customer review's role which also provides comments, recommendations and shared buying experiences from previous buyers. That information is crucial because that will either restraint or leads the consumers to complete their online purchasing decision-making process.

Phase 3: After purchase needs

In the third phase it consists of common issues faced by the consumer which prone to customer services such as the return policy, delivery charges, and product enquiries. Yet again customer review plays its role as offering a platform for the consumer to write and share their experiences and opinions with other potential buyers about those matters.

Looking at Lee's model, although there were no sequential arrows that show those phases are stages in online purchasing activity, Lee believes that it is a sequence of actions. In normal state, consumers will only proceed with their intention to purchase when they feel

confident and have put trust on the seller or website. However, there was an argument which claims that although consumers do not trust and confident to purchase, but that will not stop them from pursuing the online shopping activity such as comparing and searching.

The trust and the confidence issues are only a matter before the transaction phase takes place but will not prevent the consumers from performing intensive research on websites. They probably might just want to learn and find out about market price and situation although without the presence of confident feeling in the acts. Thus, it is not significant to define those phases as stages and that is why there are no sequential arrows shown in the model (Karimi. S, 2013).
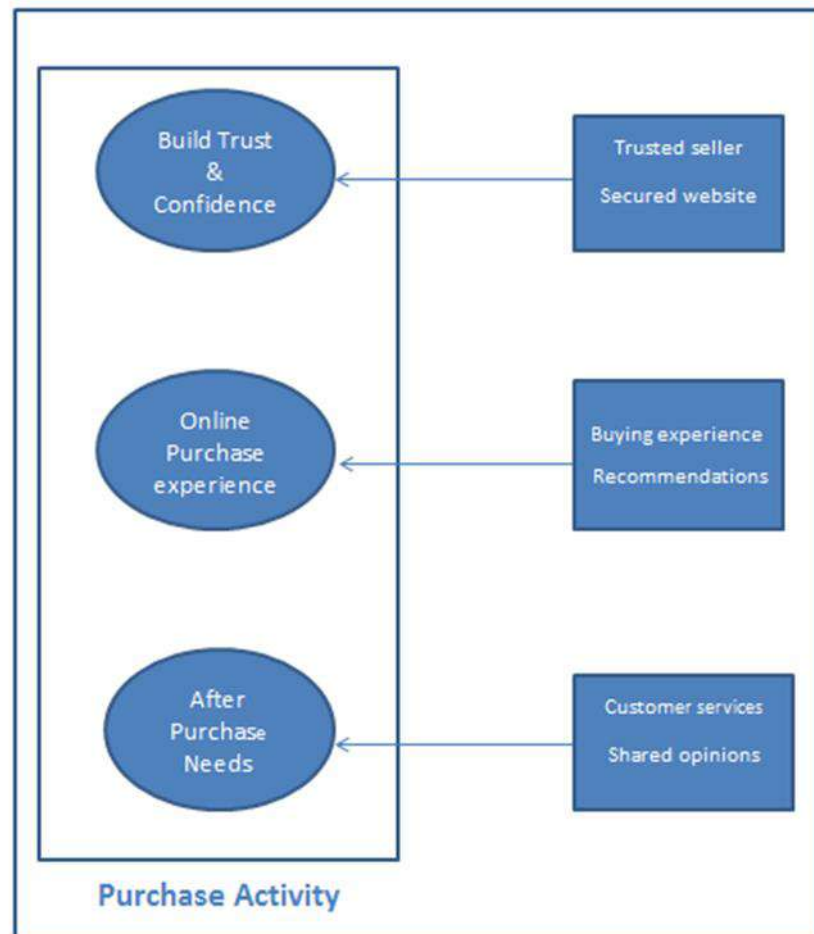
Figure 1.0: Lee's Model of Online Consumer Purchasing Behaviour (2002)

Lee's model of consumer purchasing behaviour is very beneficial to be used as a framework and guideline to build and design commercial business websites and according to Lee. P. M (2012), this model can help e-business to verify the different activities of consumers and design better interface for the website.

2.4.2   The Theory Model of Comment & Recommendation Impacts on Online Shopper Buying Behaviour

This model will explain how the comments and recommendations from various online sources have an impact on online shopping behaviour; particularly in online shopping satisfaction, experience, intention, and item purchases. It also shows their relationships to one another. The research discovered that potential consumers usually would refer to comments and recommendations by other consumers when they are about to begin their online shopping activity (Chen 2012).

Figure 1.1: The Theory Model of Recommendation & Comment Impacts on Online Shopper Buying Behaviour. (Chen. H, 2012)

- **Comments and Recommendations**

A consumer study conducted by Chen .H, (2012) has claimed that during the online shopping activity, consumers tend to look on these four factors in comments;

Money Factor, Product Attributes Factor, Product Delivery Factor and Dissatisfaction Solution Factor.

Money Factor consists of the price of the product, value of product, worthiness matter on money spent to buy the products etc. In Product Attributes Factor represents the quality of product aspects, features of products, pro and cons of the product designs etc. As for the Product Delivery Factor, it is all about the delivery services from packaging, cost, time, efficiency and accuracy. Lastly the Dissatisfaction Solution Factor where it generally caters the customer services such as after-sales service, returns policy, product enquiries and etc.

In Recommendation, whether it is a recommendation of products by the Recommender System or other recommendations from customer review such as recommending best brand, trusted seller to deal with, item shall be bought together, and etcetera is all beneficial and useful for consumers in their online purchasing activity.

- **The Relations of Comment & Recommendation toward Online Shopping Satisfaction, Online Shopping experience, Online Shopping Intentions and Item Purchased.**

This model shows that comments and recommendations have a positive influence on Online Shopping Satisfaction, Online Shopping experience, Online Shopping Intentions and eventually leads to purchasing an item. The use of comments and recommendations can influence the shopping experience and satisfaction.

Consumers will feel satisfied reading good comments and receiving recommendation. They feel pleased with the information provided in the comment and recommendation regardless of whether it's about buying or not buying the product. Consumers also feel good during their shopping experience when they have good comments and recommendations that they can refer to. Hence, when the consumers feel satisfied and have had good shopping experience, the level of their intention to buy is increases as well.

This is how comments and recommendations play a role in influencing the online shopping behaviour generally and processes which particularly lead to the purchasing phase. Here, the importance of gathering good, useful, fair and effective information ensures a good shopping experience and customer satisfaction. Thus, the best platform to provide, collect, comprehend, organise and present the information from comments and recommendations is through customer review.

2.5 The Quality of Online Customer Reviews

Smith *et al*. (2005), in his recent study, said that a review's quality is defined by the review's contents' quality in the information characteristics perspectives such as based on relevance, understandability, sufficiency, and objectivity. Also, according to Ha and Hong-Youl (2006), the quality of information also refers to its usefulness and easy-to-use of the attributes in the information to assist the consumers in evaluating and making a good decision. Some customers look for information about products before deciding to make purchase. They usually expect to find as much information as they can. Hence the quality and the usefulness of the review's contents can affect the customer's preferences for products and decision-making process (Ha and Hong-Youl 2002). High-quality reviews which contain sufficient information on the product is essential for customers and way more important to the first-time customers as compared to the existing ones (Ha and Hong-Youl 2002).

The quality level of information is always seen as a vital factor too and can control pertinent decision making made by consumers (Keller and Staelin, 1987). Some big online retailers like eBay and Amazon have attempted to tackle the issue of credibility and truthfulness of recommendations by providing a rating system. The system enables the consumers to give feedback about the information written by previous buyers or recommenders in terms of its quality (Jones and Leonard, 2008). Another retailer such as Epinions.com uses a more subjective approach, posting the peer reviewer's background and interest. This practice suggests that by providing the profiles of the reviewers, it will help in aiding the consumers to decide whether to accept the peer advice or not (Smith *et al.* 2005).

According to Park *et al*. (2011), reviews that are persuasive and logical, with sufficient details based on specific facts about the product, have a strong positive effect on purchasing intention.

Reviews could be treated as supplementary information available via e-WOM by consumers. When a review is read as useful and delivers some important information, it is perceived as a positive review and could be trusted since it is posted by people who have purchased and used the products sold. Furthermore, when a review provides sufficient reasons for a recommendation with an understandable objective, the review is reasonably more persuasive rather than a review that merely states recommendations and feelings with less specific reasons. As the former buyers are unknown and anonymous, people are generally hard to believe and accept the posted review unless it has provided sufficient important information.

Besides the online customer review's quality, the number of reviews can further increase the purchasing intention of consumers. A higher number of reviews indicates the popularity of the product, and this popularity indicator causes purchasing intention to increase as well. Furthermore, the popularity also results in higher sales volume of a product, and that has a strong relationship with the number of products reviewed. The higher the number of reviews, the higher the popularity and importance The quantity of reviews possibly drives consumers to justify their decision to purchase. Hence, the quality and quantity of online consumer reviews have a positive effect on consumer purchasing intentions (Smith *et al.* 2005).

Considering the customer review during online purchasing also involves certain criteria from the customer reviewer itself. In other words, the characteristics that make the customer review helpful for online shoppers to find and trust the product information besides easing their decision-making process.

The level of overall rating has a significant effect on customer reviews (Chen 2003) and Mudambi and Schuff (2010) in their writings mention that products which have many positive ratings make a quality product or customer review. For instance, in Amazon, the quality of customer reviews is indicated by the helpfulness vote. The more votes received, the more trust is developed because the review is seen as a quality customer review by the customers. According to Yang *et al.* (2009), the negative and positive orientation of reviews is indicated and measured by product rating scores. The pros and cons of product features which are shown on business websites that have good customer review system like on Amazon not only result in the quality of reviews improved but Mudambi and Schuff (2010) also claimed that the growth of product sales is influenced positively by the high volume of positive ratings and helpfulness votes.

The longer, more in-depth reviews appeared to be more convincing to online shoppers as they contain greater product details written by experienced users. In this aspect of the experience, some users were really happy and some were not, and these two types of users wrote quite helpful reviews revealing the most about the strength and weaknesses of the products.

Mudambi and Schuff (2010) also claimed that the added depth of the review written increases the confidence level, and hence it eases the prospective buyers decision-making process. Other indications as what claimed by Baek *et al.* (2013), the contents of customer reviews are perceived as helpful if it is detailed for high price products and written by high credibility reviewer for experience goods. While low-price products and search goods, detailed reviews are less important and prone to focus on review ratings as the main indicator. However, the newly added and recent reviews are more important and have a bigger impact on the consumers for products that have fewer reviews (Hu *et al.* 2008).

2.6 Information Search and Retrieval from Online Customer Reviews

Observing today's consumers, regardless of their intentions, they are significantly exposed to various sources used to search for and retrieve information from both online and offline media. Thus, providing adequate information, especially in online environments, could reduce the consumer search cost making the online purchasing decision process smoother. Then, decision making is at an optimal level (Ha and Hong-Youl 2002). Therefore, another significant role of the customer review is to help in reducing the search cost for retrieving the right product that can fit the customers' needs or preferences (Chen *et al.*2004).

2.6.1 Physical and Cognitive Search Cost Issue

According to Johnson, Bellman and Lohse (2003), there are two main types of search cost: the physical search cost and the cognitive search cost. Physical search cost refers to the time required to find the necessary information for shoppers to choose while cognitive search cost refers to the cost of thinking and sense-making that the shoppers have to do about the information collected. Initially, that was the main reason why people use customer reviews in online shopping: as a guide for them to make a good and right choice of what they should buy while lessening the physical and cognitive search cost involved.

Hence, the roles of customer reviews are varied and yet significant to both sellers and buyers. At the end of the day, this leads to more prospective buyers consulting customer reviews in their online shopping activity.
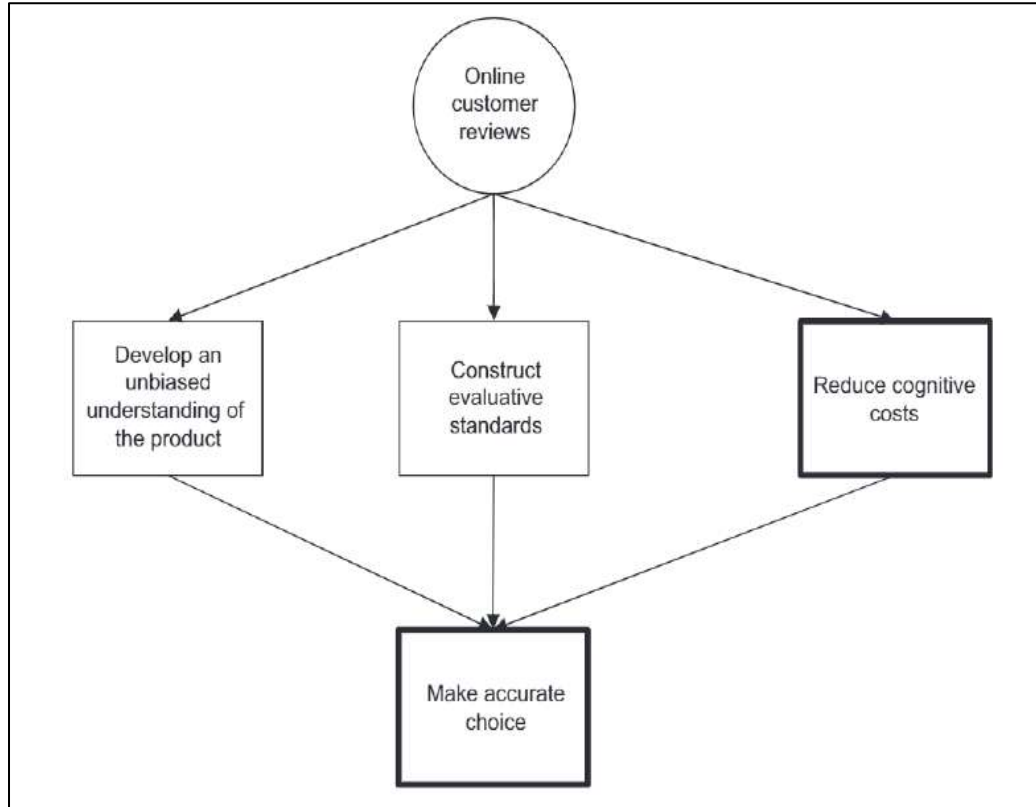
Figure 1.0: The goals of Online Customer Reviews (Liu et al,.2011)

According to a study by Liu *et al.* (2011), shows that online customer reviews established an ultimate goal; helping users to make an accurate choice.

There are three (3) factors that influence the consumers to achieve their goal through the use of online customer reviews;

1. Develop an unbiased understanding of a product
2. Construct evaluative standards
3. Reduce cognitive cost

As for this study, the matter of interest lies on the point number three **(3)** above; to reduce the cognitive cost. However, in regards to the current state of online customer reviews available on the internet, embedded almost in many shopping sites you can name, there were zillions of it. The amount is huge and unbearable for the online shoppers to process the detailed information from the customer reviews although, they have admitted that there is a need of referring to the reviews.

How much actually the online shopper would put into their effort in processing information while gathering and reading the online customer reviews? The answer is, for as long as the online shoppers are under sufficiency principle of information processing, they will continue to engage with sources of information until they have reached the breadth and depth of understanding (Chen *et al,*.1999).

According to Eagly and Caiken, (1993), people would employ all sorts of efforts required in order to achieve a sufficient level of confidence. This means that the sources of information will be used and utilised until the users find the information they need. To them, it was such an accomplishment because it can enhance the users' confidence in their decision making. Product description details on a product page are most likely to remain the same except for the enhancement factor of the product. Therefore, where else would the online shoppers go to find more information? The online customer reviews are the next item for shoppers to find further information. Not only do online reviews have the information needed, but the recency factor encourages and support the online shoppers to get as much information they can: the latest updated data of user experience.

Back to the root of the issue, the abundance of reviews, it somehow develops the probability of cognitive search issue to the online shoppers. Therefore, an approach was taken to support the information search and retrieval process using heuristics. The following section will discuss the role of heuristics in providing provisions to accommodate the global issue of the online shoppers' overload of information from customer reviews.

2.6.2 Heuristics in Information Search, Retrieval and Presentation Format.

Heuristics are defined as the rule-of-thumb, strategy or mental shortcut that is used to help find solutions to problems, decide between options, and selecting ultimatums when faced with choices (Gigerenzer 2011). The role of heuristics is largely discussed and studied as a method or art for simplifying the decision-making process. Taken into the context of customer reviews, heuristics are used in many elements and discussed in the following studies: information search in heuristics decision-making (Dhami and Harries 2010), heuristics as a method of characterising the information seeking on the internet (Hill 2013), the influence of consumer research behaviours on consumer's decision making heuristics (Etco *et al.*2017), the impact of heuristics processing to determine how informative the customer reviews (Tan Ford and Chang 2018), using simple heuristics strategies to investigate the influence of information presentation format (Wu *et al.* 2017), employing systematic analysis and heuristic-systematic model in online reviews research of hospitality service (Hlee *et al.*2018) and lastly, the availability of heuristics in online consumer reviews (Nazlan *et al.*2018).

From the above trend, some of the studies on the role of heuristics did not explore the information search process in general, but also specifically discuss its influence in the context of information search in online customer reviews. Based on the literature conducted across this scope of research topics (general to specific settings), heuristics play an important role in the information search process, decision-making process, and, more interestingly, as a strategy to measure the influence of information presentation format.

The overall main theme of the literature reviewed is the organisation and presentation of information in online customer reviews. In Wu *et al.* (2017), a heuristic is discussed in the context of the information presentation format which is relevant to the topic of this research. The study implies that simple decision heuristics can be practically more useful as a tool to make information search decisions over complex technical computing methods. The idea was pragmatically supported by a few earlier studies, such as Metzger *et al.* (2010). which claimed that heuristics is the practical means of coping in an environment of information overload and uncertainty. Therefore, in the convergence of the two main studies above, heuristics cues have the potential to be implicitly presented as information categories. The information categories can support users in the information search process

through retrieving memories of information content from the information categories. The information categories preceded the decision of which information to be searched for by the users. In the context of this study (information categories in online customer reviews), the following section discusses the previous works on categorising information in customer reviews.

2.7 The Organisation and Presentation of Online Customer Reviews

There is a lot of works done on the matter of organisation and presentation of customer reviews. The limitations of the customer reviews systems were long identified since its existence on the web (Li *et al.* 2010). The issue has been studied and discussed in several works, and researchers have engaged in the study of customer review organisation and presentation. There are several studies that present alternative methods that were being invented, explored, improvised and developed to provide a range of ways on how to overcome the limitations as well as to better the organise and present online customer reviews system.

The following shows the range of studies discussing further technical aspects of online customer reviews based on technologies used in the studies along with critiques on the shortcomings discovered in those technologies.

2.7.1 Classification of Reviews

Peter (2002), in his study, had proposed a simple unsupervised algorithm that learns to classify customer reviews as 'recommended' (thumbs-up) or 'not recommended' (thumbs-down) and calculate the phrase's semantic orientation. This approach predicted a review's overall polarity by the average semantic orientation calculated which classifies whether the reviews are positive or negative.

Pang's *et al.* (2005) study introduced a rather simple classification approach, which is the star-rating concept. The star-rating approach simply determines how positive or negative a review is with a simple scale indicator: one to five stars; where one star represents low quality while up to five stars represent higher quality. The star rating approach is good at aiding the customers in finding and reading only high rated star reviews, but this method would not allow the users to reach other important details in reviews that have a low star rating. This approach weighs the stars rating score as another tool to provide unbiased

judgement to support the customer reviews content for a product. The purpose of star rating is also to aid users to leverage the mixed contents of customer reviews; positive and negative opinions.

2.7.2 Extraction, Selection and Summarisation of Reviews

Since a product usually has many features with many different customer opinions about it, the following studies have changed the outcome direction from classification to extraction. Hu and Liu (2004) had introduced a statistical method to capture an object's features using association rules for mining and summarising customer reviews. The approach considered adjectives as opinions and manually selected the opinion seeds using WordNet to form an object-features based summary.

Later, Hu and Liu (2004) proposed another method for mining opinion features; using NLProcessor Linguistic Parser and Part-of-Speech (POS) which identify words that are not limited to adjectives, but also nouns, verbs, adverbs and others that represent opinions. This approach summarises the product reviews on product features and classifies whether the opinions are negative or positive. Instead of focusing on classifying a review's entire content, this approach rather focuses on classifying each sentence of the review that contained product features. The output of the product summary has been improved from the previous version with new tools used and different approaches added.

Zhuang *et al.* (2006) have proposed an approach similar to Hu and Liu's (2004): an object-feature based review summary method which extracts object-feature keywords and opinion keywords. However, in his study, the approach applies to film reviews with different tools used. The keyword extraction used a dependency grammar graph to identify the pairs of feature opinions and used the list of keywords that were annotated manually. The summary produced contained keywords of the film's features and opinions of viewers. Back to the product review scope, in response to concern toward the customer's likes and dislikes about products, Cui *et al.* (2006) had proposed an approach to sentiment classification that aimed to differentiate between what people comment about liking and disliking the product features in their reviews. The approach classifies words according to a semantic orientation which is able to distinguish between positive and negative opinions. The output was similar to Hu and Liu's (2004) approach although both were using different mechanisms. Using

Cui's (2006) approach, the product review summary contained positive and negative opinions of reviewers.

There was another approach proposed by Ding *et al.* (2008) which used a Holistic Lexicon-Based approach for mining opinions in customer reviews. In the previous works, the approaches used a list of opinion words (known as an opinion lexicon) that express the desirable and undesirable states of customers. Despite focusing on the sentence alone as the previous approaches do, this holistic lexicon-based approach exploits the external information and evidence in other reviews, other sentences and some linguistic conventions in natural language expression to understand the orientation of the opinion words. ThatThis means this approach provides a better summary of product reviews, with the holistic approach used in opinion mining, sentiment analysis and semantic orientation processes.

All this academic research and work done above were meant to simplify the presentation of reviews by providing a brief product summary to the customers. However, those studies only focused on methods that extracted the opinions on object features separately, ignoring the correlation among the outputs of opinions and object features apart from putting aside the other important details in the review contents (Li *et al.* 2010). Hence, the works have proven effective to minimise the volume of reviews through mining and summarising review approaches, but could not present other important information in the review summary produced. The studies of customer review organisation and presentation continued with further approaches or methods being proposed.

2.7.3 Ranking the Reviews
Apart from approaches that are capable of presenting a summary of a product on two different aspects (positive and negative opinions), other approaches are being proposed with different outcomes. For example, in her study, Kim *et al.* (2006) claimed that it is important for the quality of a customers' reviews contents to be ranked. As the reviews can be numerous and vary, the contents of the review should be assessed in terms of its helpfulness in order to enhance the customer experiences when using the customer review's information. The approach introduced in this study proposed an automation system in the helpfulness vote by the users. The reason behind this automation was to avoid the bias of votes among products based on their traffic status and popularity.

Although there are options to view and filter reviews (such as most helpful reviews, newest reviews or star ratings like in Amazon's customer reviews system), the reviews are presented in a general format and the contents are not categorised based on what types of information users are looking for. Despite having an average rating score shown in the review system, it does not necessarily reveal the true quality of the product; thus, it will lead to misleading recommendations (Hu *et al.* 2006). Also, the rating scores shown on products are based on overall reviews and not according to product features. Hence, it does not help the user find reviews that match their additional product information-seeking preferences (Yang *et al.*2009). Due to the difficulty that people have in accessing information in a huge number of customer reviews with limited time on decision-making, they have no other option but to refer to a ratings score as a quick reference (Hu and Liu 2004) despite acknowledged that rating references are insufficient as it presents the average of either extremely high or extremely low and obviously not carrying much of the helpful information to the customers (Zhang *et al.* 2010).

2.7.4 Attribute-Oriented System

In Liu's *et al.* (2011) study, an approach to organising customer reviews was proposed through designing a website that used four main design principles – categorisation, overview, linkage and filtering – to form an attribute-oriented overview system. The attribute overview system would display the profile of the reviews. In each review's profile, there were tags where each of them represents an attribute mentioned in the reviews. The system would display a set of customer reviews according to the attribute tags selected by the user. This filter-based concept is good as it allows users to select reviews based on their preferences; however, this approach is an unsupervised mechanism, hence the number of tags could not be controlled. The more attributes mentioned in a review, the longer the list of attribute tags available. Zhang's *et al.* (2012) study suggested an approach of credibility detection to reviews and their reviewers due to the issues of inconsistency between the review's content and the rating scores given by the same reviewer. Hence, this study intended to help users to find reliable reviews.

Lappas *et al.* (2013) produced a study that selected a characteristic set of reviews where the approach used was intended to overcome the gap between review selection and review summarization from the previous works. This approach provided a better product review summary than the prior approaches as the outcome was set for the 'important' reviews. The important reviews are the set of reviews presented and shown to the users. In a way, this approach has automatically filtered which summary of reviews are deemed 'important' for users where it contains at least one positive review and one negative review. However, the only significant contribution by this approach is that it counts the immediacy factor of the recent reviews, but does not aid users to find what reviews are relevant to their needs.

2.7.5 Rated Tags on Reviews

Then came another approach by Kailer *et al.* (2014) which proposed a social commerce service named Rated Tags. It is an online customer review system that displays rated tags to indicate favouritism on the tags based on their ratings. Rated Tags is a method that combines two mechanisms: user-generated tags and a 5-star rating scale. The two mechanisms are integrated into social media. This approach was introduced as a way to aid customers in the decision-making process. It also acts as a filter where users can select tags and get all reviews of the selected rated tags. Although this is similar to the previous work by Lappas *et al.* (2013), this Rated Tags method uses social media for rating purposes and by taking advantage of the popular use of social media among online users it has derived the idea of integrating social media into an online customer review platform.

2.8 Website Experience Influence Online Shopper's Decision Making

In the existing literature, loads of academic papers and studies researching online customer reviews were discussed. The reviews used were obtained from various sources of shopping sites across industries such as the entertainment and media industry (movies, videogames and television shows), the fashion industry (fashion apparel and beauty products), and the hospitality industry (tourism, hotels, restaurants and car rentals). Also, there are various types of concepts in managing and organising reviews presented. The most recent studies in terms of this research (from 2011 to 2016), presented more improved and updated reviews and management concepts which were more user-driven oriented.

The organisation of the literature in this chapter, written and sorted from the era of customer reviews early development up to the most recent studies, significantly show there is a revolutionary transition in approaches used to deliver and present online customer reviews. Based on the literature, the most recent study applied user-driven concepts using reviews in the context of service-based shopping sites (hotels booking). Following the trend of this study, this research intended to further explore the opportunity to apply a user-driven approach to organising and presenting online customer reviews in another context: product-based shopping sites. The importance highlighted in Thomas's *et al.* (2006) study stated that online shoppers demand clarity of information and easy navigation in online customer review systems. Besides, the popularity and reputation of the shopping site itself contributed to a significant form of online shopping behaviours. There are various types of online consumers found in Zhang's *et al.* (2007) study. Namely, young, educated, and demanding shoppers, older online shoppers, and experienced online users. Those three types of online shoppers are open-minded, risk-averse and information-seeking shoppers. Based on the figure shown below (Figure 6. developed by Darley *et al.* (2010)), the online environment does appear to be an influencing factor of the five stages of the decision-making process theory. This study is intended to explore further the influence of online environments: especially a website's experience on the online purchasing decision making process. The online environment itself consists of four sub-elements that form the environment. The elements are website quality, website interface, website satisfaction and website experience.

The website experience was measured by indicating the number of times the online users purchased anything on the web and also according to the age of the online shoppers. As for the website quality, it was measured by the quality and amount of information provided, the ease of navigation, the embedded website features and the convenience factors when browsing. Web satisfaction was measured by the number of hits the website received (Darley *et al.*2010).

The modified model relates to this study insofar as it connects the decision-making process with the online environment. The website experience is one of the sub-elements under the online environment external factor, and therefore theoretically supports that decision making can be influenced by the experience of using systems in online environment or setting. As customer review systems are usually part of the online shopping websites, apparently the review system encountered are part of the influencing factor of the website (Gupta *et al.* 2018).
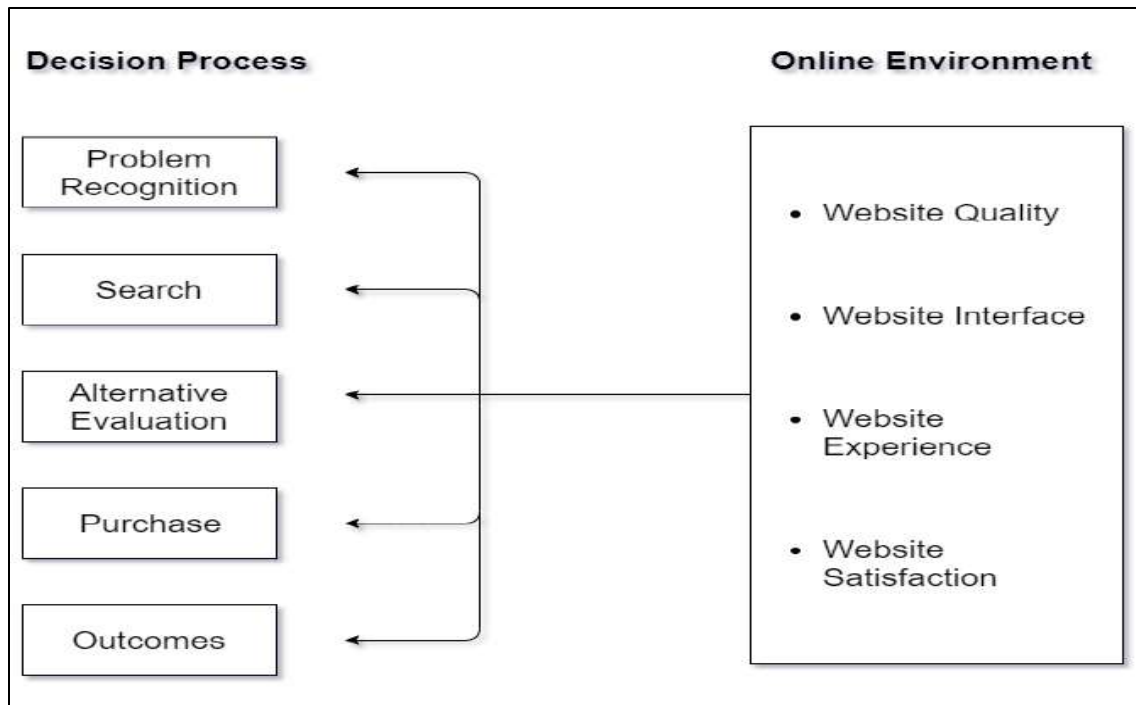
Figure 6 A modified model of online consumer behaviour and decision making (Darley et al,. 2010)

Besides, the other elements such as website satisfaction, website interface and website quality seemingly also represent the satisfaction, quality and interface of the online customer review systems embedded in the website (Shen 2012). The model illustrates in general for all the elements and components displayed and structured. That nature of the model opens for further interpretation of users depending on the purpose and context of use. That could mean that if the customer review system on a shopping website provided quality and vast numbers of information (in customer reviews context), it could influence the users to visit more.

More visits indicate the website is good quality and this eventually leads to a high number of hits. When the hits are high, the satisfaction emerged to signify the response of online shoppers or internet users. When the users are satisfied, it shows that there is a good web experience, as well as online shopping experience if online purchasing transactions are completed (Lin 2007). As for this research, the modified model as discussed in Darley *et al.* (2010) supports this study and emphasises that online purchasing decision making can be influenced by the online shoppers' website experience.

This information has been a crucial starting point to encourage greater shopping experience, and this study figured out that the information search aspect is worthwhile for further research. With technologies changing over the years since the beginning era of online shopping, the way online shoppers or users seek information and make purchases is prospectively changing too (Xiang *et al.*2015).

2.9 The Literature Gap

- There are lots of academic studies about online customer reviews stretching from the psychological factors (such as the influence of customer reviews towards purchasing intention, information search behaviours and etc.), business factors (such as the impact of customer reviews to sales, business growth, intention to shop online and etc.) and lastly to the technical factors (such as in terms of structural (lengthiness), lexical (observed words), syntactic (linguistic properties for example; verbs, adverbs, adjectives, nouns), semantic (specialised vocabulary) and meta-data (observations dependent to words for example; star rating) aspects).

  The majority of those studies are quantitative-based studies and they were using big-sized data sources such as a large sample of survey participation (questionnaire), retrieving the existing bulk of user data information available online (data mining, big data) and / or conducting experiments involving participants from the large-sized focus group (experimental based study). Nevertheless, there were not many studies found focusing on the information system management, scoping on the practicality aspects and emphasising on the system utility concept factors (such as the ways of organising and presenting customer reviews, the concept of utilising customer reviews) that used in-depth data (such as in-depth interviews of user's insights) as the empirical evidence and data source to produce IT-based solution.

- Most of the studies of the online customer reviews, whether service or product-based reviews mentioned in the above point are highly technical background papers. Thus, the approaches used in those studies were susceptible to using computational, mathematical, statistical and other computing or non-computing technical approaches to data collection, data analysis and producing solutions. Yet, there were only a few customer review related studies found with a qualitative basis that exploited and explored the empirical evidence (such as the interview data

of the online shoppers' experience) in the data collection and analysis, which could have provided input and the production of IT solutions based on this empirical evidence.

Therefore, the literature shows that there is a need to have more empirical-based research or studies regarding the use of online customer reviews in general. Hence, this study intends to fill the gap by conducting further research requiring empirical evidence as the source of data. The empirical evidence will be acquired by executing research methods which explore the online shoppers' or users' experience. It will then process the data to produce an IT solution.

Besides, most of the previous studies already explored the techniques of organising customer reviews as discussed in the earlier chapter and examined how consumers process information in the context of online reviews. However, there is lack of studies that discuss this type of information in the reviews. Thus, the plan of choosing the suitable research methodology will be explained further in the next chapter; the Chapter 3 covering research methodology.

Chapter 3
Research Methodology

3.1 Introduction

The previous chapter discussed the literature and revealed the research gap that has become the orientation of this study. To pursue the research, this chapter will discuss a range of selected methods to address this research gap. There are various research philosophies, strategies and approaches presented here, along with the justification of each method selected. The chapter starts with the fundamentals of research and the philosophy then moves to research approaches that define the research orientation. Next, the research design is illustrated with a diagram to show the flow of the research action plan. Finally, the chosen research strategy is explained to define the most appropriate method for this research. Other supporting details such as tools and techniques selected for data collection, sampling, data analysis and ethical consideration matters are also discussed to complete this chapter.

3.2 Research Philosophy

Collins and Hussey (2003) define a research philosophy as the philosophical assumption and view of a researcher concerning how research should be executed and implemented for developing and embracing knowledge. Based on this definition, it is crucially important for this research to understand its nature to examine both useful and the most appropriate methods. Saunders *et al.* (2012) supported that assumptions and understanding of the research paradigm will strengthen the selection of a research method and strategy. A research paradigm is defined as a collection of assumptions and beliefs shared among scientist on how a problem should be understood and addressed (Kuhn 1996). According to Guba and Lincoln (1994), research paradigms can be characterised by the following key terms:

There are two main research philosophies, namely Positivism and Interpretivism (Saunders *et al,.* 2009). Positivism views reality as a '*concrete structure'* while Interpretivism views it as a '*projection of human imagination'*. The following is a diagram demonstrated the six stages of a continuum of core ontological assumptions by Morgan and Smircich (1980).

Positivism ↑

Reality as a concrete structure

Reality as a concrete process

Reality as a contextual field of information

Reality as a realm of symbolic discourse

Reality as a social construction

Reality is a projection of human imagination

Interpretivism ↓
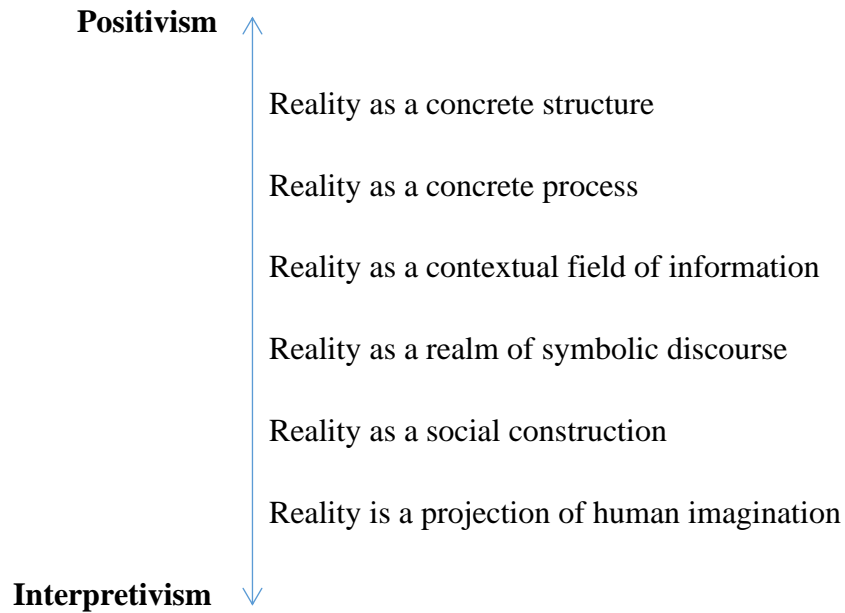
Source: Adapted from Morgan and Smircich (1980)

Figure 3.2 Continuum of Core Ontological Assumptions

The illustration above shows the stages the research assumption might stand on and therefore, could identify in which philosophy best represent the research paradigm. Different research paradigm does have not only different ontological assumptions or philosophy but also have different epistemological, axiological, methodological assumptions and data collection technique. The following table will show the comparison of research assumptions between two paradigms; Positivism and Interpretivism.

Table 3.1: The Assumptions of the Positivism and Interpretivism

Assumptions	Positivism	Interpretivism
Ontology	Reality is objective and apart from the researcher	Reality is subjective and seen by participants in the study
Epistemology	The researcher is independent of that being researched	Researcher interacts with that being researched
Axiological	Value-free and unbiased	Value-laden and biased
Methodological	Deductive Process Cause and effect Static design (categories isolated before the study) Accurate through validity and reliability	Inductive Process Mutual simultaneous shaping factor Emerging design (categories identified during the study) Accurate through verification
Data Collection	Highly structured, large samples, quantitative	Small samples, in-depth investigations, qualitative

Source: Collis and Hussey (2003, p.49) and Saunders *et al*. (2009)

3.2.1 Interpretivism

With interpretivism, the research employing this philosophy typically views reality as subjective, socially constructed, existing in the researcher's mind, given meaning by people, and often influenced by how it will be examined (Collis and Hussey 2003). Interpretivist philosophy-based research should be linked to qualitative methods, inductive approaches, and in-depth analysis in order to understand the social world and phenomena. Also, the knowledge in this kind of research paradigm is usually hidden but could be successfully explored and revealed through deep thinking (Erkan 2014). Studies that employ interpretivist methods pay attention to the way people act and make sense of the reality or the world by exploring their experiences and sharing them in language. Hence the qualitative method is more favourable as a way to understand the human behaviours (Easterby *et al.* 2012).

3.2.2 Positivism

In the positivist assumption, reality is objectively described, can be measured using measurable properties, and dependent on the researcher. Hence, it has to be engaged with statistical analysis, deductive approaches, and quantitative methods. Quantitative methods can explain and predict the condition of the social world through the examination of underlying relationships between the components involved (Collis and Hussey 2003). Studies that employ positivist philosophy use existing literature to develop theories and establish hypotheses and therefore needed to collect numerical data for further investigation to understand human behaviours (Creswell 2009). Since the data collected is numerical in nature, the results produced usually indicate whether it is valid or invalid, and commonly understood as accepting or rejecting the hypotheses developed and tested (Saunders *et al.* 2012).

Table 3.2: The Summary of the Positivism and Interpretivism

Positivism	Interpretivism
Tends to produce quantitative data	Tends to produce qualitative data
Uses large samples	Uses small samples
Concerned with hypothesis testing	Concerned with generating theories
Data is highly specific and precise	Data is rich and subjective
Location is artificial	Location is natural
Reliability is high	Reliability is low
Validity is low	Validity is high
Generalises from sample to the population	Generalises from one setting to another

Source: Collis and Hussey (2003, p.55)

3.2.3 Interpretivism Paradigm as Research Philosophy

Given the various assumptions explaining positivism and interpretivism, it can be understood that this research was conducted within an interpretivist paradigm. The first phase of this research investigates whether there are (or is not) online customer reviews involved in an online shopper's online shopping process. In executing this investigation, this study needed a qualitative approach to obtain the intended information. From the methodological perspective, qualitative methods are more employable to understand and investigate the human behaviour allowing the researcher to further find out about any events which occur unexpectedly (Saunders *et al.* 2012). However, in the second part of this research (the comparative study), some results were contrary to expectations; resulting in new questions, starting with a common interrogative word: "Why?". Rather than leaving

the question unanswered, this research also administered in-depth interviews to enlighten the insightful results found in the study. Therefore, the adopted philosophy in this research is pragmatism. Different research philosophies were introduced in this section, along with the appropriate philosophy for this research. The following section introduces the design of this research.

3.3 Research Design

Developing the whole plan for the study in which focusing on finding and determining what methods to be used in acquiring the answers to the set research question is called research resign (Saunders *et al.* 2012). Research design contains the whole structure and processes plan from the very beginning of the study to its end; meaning until the study concludes its findings where it produces a piece of concrete evidence on how the research question has been answered (Bryman and Bell, 2011). With this study, the research design pictured the early stages consisting of the aim, objectives, and research question being set to guide where this research is heading. Then the next stage designed the predefined methods to be used to collect the data inclusive predefined sources of where to obtain the needed data. Next, the research design of this study is completed with a plan of predefined methods for data analysis and evaluating solutions. The research design is highly essential as without it the research may be done unsystematically and not appropriately guided. This research portrays five stages of research design: stage 1, stage 2, stage 3, stage 4 and stage 5.

Stage 1 consists of developing a literature review and an exploratory study. The literature review mainly presents related works and reviews on the organisation and presentation of online customer reviews, while the exploratory study presents two main studies conducted. The first study is the report on a technology review of the current online customer review systems available and a preliminary interview and survey user study. The research tools identified for stage 1 tasks are a literature review, technology review, questionnaire and semi-structured interview.

Stage 2 consists of developing primary research. The primary research consists of two phases of user studies which are also the primary sources of data. There is primary research phase 1 and primary research phase 2. In primary research phase 1, the online shopping videos are required. The videos shall be about the real online shoppers as the participants, conducting real online purchases.

As for primary research phase 2, the videos are about the online browsing and shopping of real online shoppers too. In stage 2, both user studies are conducted through ethnographically-informed observation user studies. There are two forms of data collected during this stage: video and interviews. After the videos from participants are collected, the videos will be observed and analysed according to the observations done. After the observation process is done, the interview session will take place to gather further data regarding their online shopping and browsing videos.

Stage 3 consists of analysing the data output from both phases of primary research to be used for the system prototype development in stage 4. During this stage, the software packages will be used to perform data analysis for two tasks: one analysis of video data observation and another analysis of the interview data. The software packages options for this study are MAXQDA and Nvivo. The data analysing method chosen is data coding. Data coding will be performed to analyse and categorise data to the output of stage 3.

Stage 4 proceeds to develop the system prototype using the basis gathered from the output of stage 3. The system prototype will be developed using Python 2.7 and CherryPy with MySQL as the database system administer. The rationale for choosing this system development software is due to the researcher's capability and skill for developing the prototype system. The prototype system will be used as the medium to demonstrate the findings of output stage 3 and, further, gather the feedback of users regarding the prototype system developed. The prototype system is viewed as the IT solution of this study and it is about the management of online customer reviews; the main topic of this study.

Stage 5 is the platform for the system prototype to be evaluated after completing the development, where this research will have two phases of user evaluation. The user evaluation process is meant for evaluating the outcome: the system prototype. The results of the user evaluations are discussed to figure out the implications of this study. The discussion also includes how the results contributed to the body of knowledge. The predefined methods used for user evaluations are in-depth interviews and questionnaires.

The five stages involved are designed to answer the research question and drive toward accomplishing the research objectives. The following is the figure that illustrates the research design of this study.
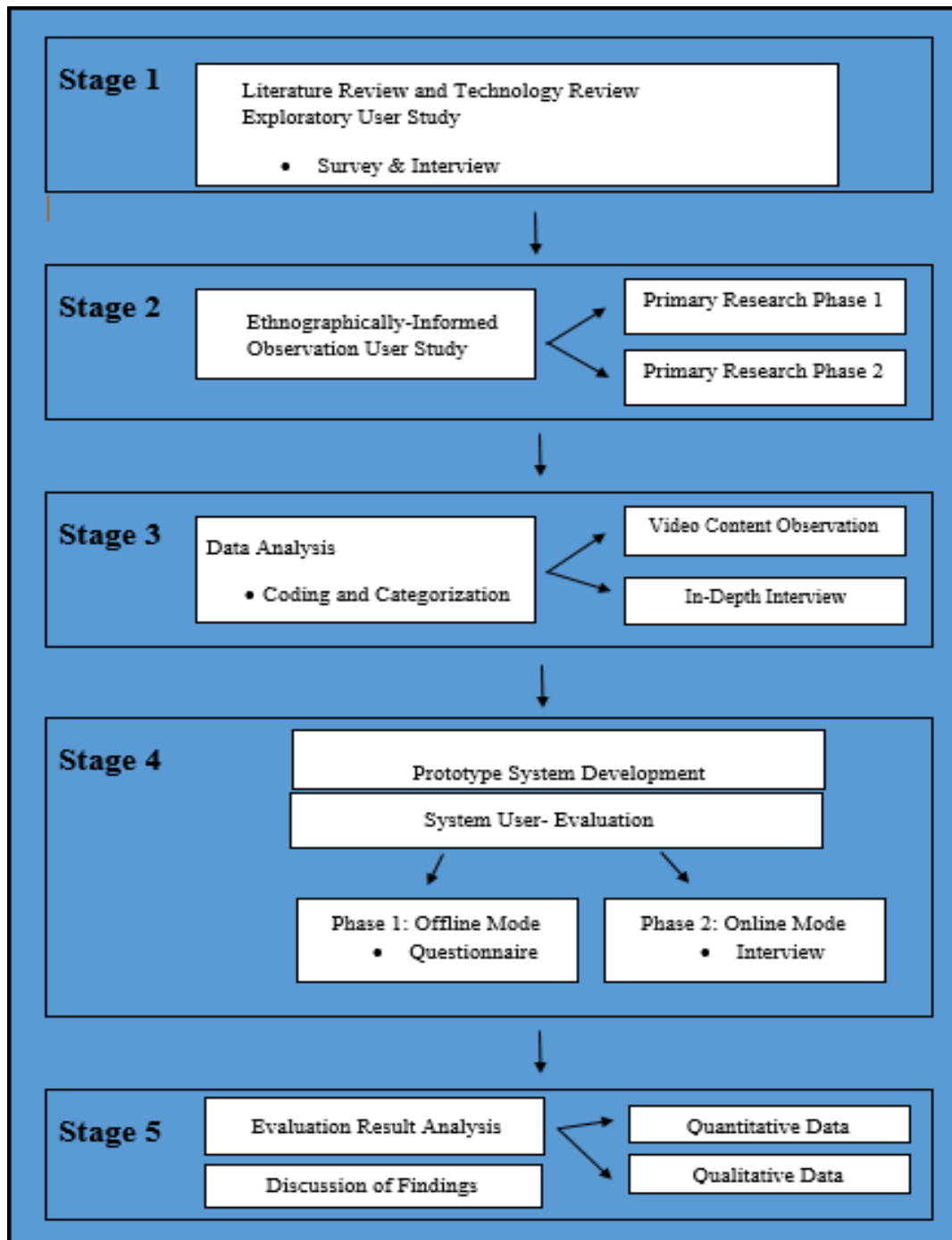
Figure 7a : The Research Design of this study

3.4 The Research Approach

The research approach is another essential principle for researchers as well as research philosophy. Therefore, initially, this section introduces deductive and inductive approaches. The triangulation of these approaches is then discussed. Finally, the last part of this section justifies the adopted research approach.

3.4.1 The Deductive and Inductive Approaches

There are two main research approaches usually chosen by researchers: namely the deductive approach or the inductive approach (Bryman and Bell, 2011). The deductive approach is generally associated with quantitative research, where the theory guides the study (Collis and Hussey, 2009). Quantitative research tests scientific theories by investigating the relationships among variables (Creswell, 2009). In the deductive approach, the research starts with hypotheses and continues with an empirical examination in order to confirm or reject them. Therefore, it is connected with the positivist paradigm (Bryman and Bell, 2011). Finally, quantitative studies use experiments or surveys as data collection methods (Saunders *et al.* 2012).

However, conversely, the inductive approach is in the opposite position to the deductive approach. The inductive approach is usually associated with qualitative research, where the theory is an outcome of the study (Collis and Hussey, 2009). Qualitative research explores social or human problems by understanding individuals and groups (Creswell, 2009). Unlike the deductive approach, the research does not start with hypotheses in the inductive approach. Instead, researchers use research questions to narrow the scope of the study and draw conclusions through findings. Therefore, it is connected with the interpretivism paradigm (Bryman and Bell, 2011). Qualitative studies commonly apply the following as data collection methods: a case study, grounded theory, narrative inquiry, and ethnography (Saunders *et al.* 2012).

3.4.2 Inductive Approach as Research Approach

Collis and Hussey (2009) underline the need for adopting the correct research approach, which supports the achievement of the research aim and objectives. As for this study, investigating the involvement of online customer reviews in the online shopping process

has brought a few questions starting with "Why". The "why" situation led the research to apply qualitative methods to gain the meaning through the insights gained from the investigation.

Rather than leaving the "why" questions unanswered, this research conducted in-depth interviews to enlighten the video observation of online shopping activity results. A qualitative method is employed here since it is considered appropriate when there is a need to reveal what surrounds a phenomenon (Brannen, 1992; Carson *et al,.* 2001). The following section introduces the strategy performed in this research.

3.5 The Research Strategy

The research strategy is considered as the methodological link between the selected research paradigm and the following preference of methods for data collection and analysis (Saunders *et al.* 2012). It refers to a plan of the researcher in order to conduct successful research by adequately addressing the research questions (Bryman and Bell 201; Saunders *et al.* 2012). Saunders *et al.* (2012) summarise the different research strategies as an experiment, survey, archival research, case study, ethnography, action research, grounded theory, or narrative inquiry. Among these research strategies, experiments and surveys are principally linked with quantitative research design; and archival research and case studies are principally linked with mixed-method design (where quantitative and qualitative techniques are combined). The rest of the strategies, which include ethnography, action research, grounded theory and narrative inquiry, are principally linked with qualitative research design (Saunders *et al.* 2012).

3.5.1 The Candidates of Research Strategy

1.   Data Mining
Data mining is an accessible technological innovation that converts piles of data into useful knowledge that can help the data owners/users make informed choices and take smart actions for their benefit. In specific terms, data mining looks for hidden patterns amongst large sets of data that can help to understand, predict, and guide future behaviour (Adhikari *et al,.* 2010). A more technical explanation: Data Mining is the set of methodologies used

in analysing data from various dimensions and perspectives, finding previously unknown hidden patterns, classifying and grouping the data and summarizing the identified relationships (Wang *et al,.* 2018).

The elements of data mining include extraction, transformation, and loading of data onto the data warehouse system, managing data in a multidimensional database system, providing access to business analysts and IT experts, analysing the data by tools, and presenting the data in a useful format, such as a graph or table (Tsai *et al,.* 2014). The data mining process is achieved by identifying relationship using classes, clusters, associations, and sequential patterns by the use of statistical analysis, machine learning and neural networks (Zhu *et al,.* 2014).

2.   Big Data Analysis

What is Big Data? Well, according to Bayer and Laney (2012), this term, Big Data implies a large set of data that is being analysed and processed using specialised techniques. The data collection of the Big Data practically is just the same as any other data collection methods. However, the Big Data input is more useful when it is analysed continuously in real-time. It is because it can boost the information formed from the big data to be more relevant, and the continuous loops provide instant response to users' insights (Vailaya 2012).

However, big data too can be analysed and collected as in typical approach; using some specific intervals. Sources of big data are variously and popularly collected from social media platforms and any other available search engines, or public utility and infrastructure. The data will be in three forms; structured, semi-structured and unstructured (Dijcks 2012).

The current trend has brought many researchers from various fields; computer and social science, psychology, business, healthcare, engineering and more to name, as the massive amount of data has a high potential of use. However, the excess of data could also lead to difficulties to the handler, the human beings. This is because when there is too much data, there will be data overload and the results in complications when processing the data. Especially for policy and decision-making process (Bashir and Gill 2016). Conversely, despite the handling difficulties, the business and other sectors view the Big Data as

importantly valuable as it will enhance the productivity of a business seeing successful accomplishments across numerous disciplines (Rathore *et al,.* 2016) The constant competitive environment caused the continuous exploration of Big Data by industries because the data is not in the state of fixed dataset, it is always on data streaming. This means the data is frequently updated and accumulated at high capacity and velocity (Cai *et al,.* 2017).

3.   Ethnographic Approach

"You can see a lot by observing" Yogi Berra 1997

Motivated by the statement above, an observational-based method is chosen to carry out this study. According to Lazar *et al.* (2010), ethnography is defined as a method used to observe, understand and examine human, social and organizational contexts in technology as its capacity to provide better insights about those contexts for the researchers. This method involves a study about understanding people and their problems, challenges, processes, and norms to develop a technological application for or with them.

In human-computer interaction (HCI) research, which commonly stands on 'how to build systems and how users interact with computers' basis, is using ethnography user study widely which usually carry out in work settings, home settings, educational settings and online (Neuman 2014). This method is currently used to study people who are using ubiquitous computing and mobile technology as it is an advantageous method to understand how technology use can change over time.

Helander (2014) claims that one of the significant strengths of using ethnography is that it promotes a flexible research design. The research will take shape as the work proceeds which means there will be unexpected but essential events happening during the study. As we all know, a human is a complex creature. Hence, it is always surprising to find out what and how exactly their point of interest is during research. In order to capture and gauge those unexpected but essential events, the various areas of interest of people can be fully supported by using ethnographic methods (Neuman 2014).

In ethnography, the in-depth observation study is not enough to stand on its own. Hence, it also relies on interviews, case studies, and documents or other artefacts (spreadsheets, and presentations). It is somehow seen as a critical practice in ethnography. Observation will usually involve triangulation: the process of studying multiple types of data to confirm observations (Lazar *et al.* 2010). There are various types of ethnographic approaches used in academic and industrial research, namely critical ethnography, postmodern ethnography and contemporary ethnography.

Critical Ethnography asethnography, according to Thomas (1993), is described as a study of reflection which analyses knowledge, actions, culture and more other factors to examine the constrained power and assumptions. In postmodern ethnography, the researcher needs to engage themselves in the social settings of their subjects in order to fully understand and interpret the environment of the subjects (Vidich and Lyman 2003). Lastly, contemporary ethnography, according to Bow (2002), is a study that practices conservative ways of ethnography but within a short time. This type of ethnographic method promotes flexible approaches and does not limit the study to only qualitative data collection, but also quantitative data collection.

As this research has a limitation in terms of the specified period of study (one year), the most suitable approach to be adopted is contemporary ethnography. This study used the ethnographically-informed observation method, which carries the same ideology as a contemporary approach as the research strategy of this study.

The study used visual and virtual ethnography developments as the approach to gathering the primary data. The following section will explain ethnographically-informed observation methods and visual and virtual ethnography development further.

3.5.2 Ethnographically-Informed Observation Method as Research Strategy

As this research aims to understand how customer reviews are involved in online shopping activity, particularly during the information search and decision-making process, the study needs to have an in-depth understanding of online shoppers' behaviour. In order to understand the online shopper's behaviour and interests, ethnography is a suitable methodology because it involves the practice of using the participation of people and allows for natural of actions among people without influence from the researcher.

3.5.2.1 Visual and Virtual Ethnography (video diary)

As this is research about the behaviour of people using and reading customer reviews during online shopping activity, visual ethnography which is in the form of video diary is a suitable methodology used to capture behavioural-based data. According to Brown (2010), a video diary can be conducted with other ethnographic methods to provide an in-depth understanding of a consumer's behaviour; ranging from their routine activities to any other private aspects of the consumer's life and culture. This explains how a video diary can be used as an excellent source to assess and understand a consumer's behaviour in online shopping; particularly in the information-seeking activity (whether that will or will not involve using customer reviews as the source).

Anderson and Fourie (2015) highly recommended this method for consumer-behaviour researchers because it allows the participants or consumers to have full control of their acts without the influence of being under the direct observation by the researcher. The ability to have full control is important to capture their actual behaviours, and it is paramount for consumer research to encourage the natural involvement of the participants' behaviours (Pink 2007). Since a video diary is acknowledged as a culturally appropriate method in consumer research, other advantages appeared from using this method such as reflexivity and flexibility.

Reflexivity refers to the acts of the participants who have full control over their behaviours and encourages rich insights and participant-driven reflections. Flexibility refers to the freedom of time allowed and given to participants as well as to the researcher. Reflexivity and flexibility could further enable the researcher to capture more hidden and unexpected – but useful – aspects of the participant's behaviours; allowing for multiple or multilevel analysis, and extending and fostering the relationship between the researchers and participants to be more productive and increase their level of understanding (Pink 2007).

Gotlieb (2006) in his study claimed that the use of a technological form of data representation increases the excitement in a researcher to explore further as data in video mode is attractive and tempting to be examined and analysed. The advantage of video is that it is easy to form, affordable, and, most importantly, user-friendly. Since an ethnographic-based study requires the researcher to have a deep understanding of the respondent's or subject's setting, it is quite impossible to be present in the setting. For

example, in this study, the subject is an online shopper where online shopping is mostly done at home, office or anywhere with mobile or computer access. It is difficult for the researcher to be wherever their subjects are. Hence, due to this limitation, video recordings are the simplest solution for capturing the online shopping activity of the subjects without the researcher present in the research setting (Gottschalk and Salvaggio 2015).

Observation and interviews are the methods commonly used to obtain further data from the respondents who participated in the video recordings. The data usually disclosed is almost accurate as if the researcher was present at the moment of recording (Brown 2010). To execute this procedure, the researcher needs to query the participant's actions in the videos, their attitudes of doing those actions, and their opinions. It is important, too, for the researcher to learn and understand as much as possible of the different contexts of each participant while observing their recorded actions (Harper 2005).

Virtual and Visual Ethnography indicated as importantly required in the information system field too. For example, is this customer reviews study, since the focus is studying the organisation and presentation of information in customer reviews, there are a bunch of information provided and gathered from various information platforms. The platforms are such as in social media (Facebook, Twitter, Instagram and etc.), the online customer reviews systems on online stores' websites, blogs and vlogs (video logs) of product reviews, and many more. Those platforms represent the information systems where people always use and therefore, the use of virtual and visual ethnography can be beneficial in terms of gathering rich data and provide in-depth data meanings for this study. Besides, it can also help to develop a critical sense when analysing and evaluating the video data sources (Hine 2000).

3.5.3 The Rationale of Selected Research Strategy

An ethnographically-informed observational study is used as a means to find out what people do, particularly in their online purchasing behaviour. The main objectives for conducting ethnographic user studies is to further research into consumer online purchase behaviour and how customer reviews are involved. The point of an ethnography-based research strategy is not only to find out how people respond to their online shopping activity (as in experimental study), but also to see how they actually behave and work on a

particular sub-activity during online shopping which is using customer reviews as a means to search for additional product information, as a decision-making reference or both.

The selection of ethnography-based methods (explicitly the ethnographically-informed observation approach) to carry this study over data mining and big data analysis will be explained further in the next paragraph with supporting claims and reviews to establish a concrete rationale of the research strategy selection.

Myres (1999) has persuasively stated that the ethnographically-informed approach is useful and practically suitable for research or studies in information system fields as it is capable of collecting rich insights from the participants and fitting into the organisational, social, and human aspects of information systems. To further support the above point, the use of ethnographically-informed observation methods is also meant to contradict the traditional ethnographic method which is a lengthier process needed (involving years of data collection and a longer time to prepare and produce solutions) (Hammersley 1992).

As time is a crucial element of this study, the selection of ethnographically-informed observation methods also allows this study to be adapted and adjusted to fit within a practical time-frame for the design process of future IT solution development. There are related previous studies (Anderson and Fourie 2015, Al-Saggaf and Williamson 2014, Kunzmann *et al.* 2009, Barnes *et al.* 2009, Bow 2002, Elliot 2002) found indicating the use of the ethnographically-informed observation method used to integrate the ethnographic user studies and contextual system design process. Thus, the previous similar information system-based studies have inspired and motivated this research to take up this method due to the proven accomplishments presented. Those similar studies also executed the ethnographically-informed method to obtain the requirements for the IT solution development. There are three (3) ways to integrate ethnographic studies into the system design. Firstly, the ethnographer is directly involved in the design process. Secondly, the ethnographer needs to go through the written documentation available in the ethnographic study, and, lastly, the ethnographer directly influences the design process (Button and Dourish 1996). As for this study, it will apply the second method of integrating the ethnographic study into the system design. The output of the ethnographic study report and documents assessment will form a set of dimension of work. This will involve the content

analysis process, followed by reliability and validity checks, and finish with an application of the analysis results obtained during the system design process.

3.6 The Data Collection Method

Mixed method research is defined as mixing qualitative and quantitative data in one study (Harrison and Reilly 2011). However, traditionally qualitative and quantitative research methods belong to two different paradigms which are incompatible. A paradigm specifies a comprehensive set of philosophical assumptions about the nature and knowledge of the world, including ontology (reality: what is assumed to exist), epistemology (knowledge of that reality: the nature of valid knowledge), and methodology (the particular way of knowing that reality) (Mingers 2001). There have long been disagreements among researchers who believe in one of the above paradigms. However, there is a quote saying; *"if either of these research approaches could be proven to be universally applicable, the debate would have been resolved long ago"* (Fitzgerald and Howcroft 1998). The mixed-method approach is now "recognized as the third major research approach or research paradigm, along with qualitative research and quantitative research" (Johnson, Onwuegbuzie and Turner 2007). In this study, the qualitative methods chose are observation (field notes) and in-depth interviews, while the quantitative method is a survey (questionnaire).

3.6.1 Survey (questionnaire)

A simple survey/questionnaire was set for the preliminary data collection phase called the exploratory study. The survey and interview study involved a small scale of twenty (20) random participants selected around Coventry and Kuala Lumpur city. The survey method is suitable to be used to study a situation by describing the factors associated (such as experience, attitudes, and behaviours) with a situation (Kate *et al.* 2003). Just as this study, it aims to study the online shopping or purchasing situation and the factors associating the situation such as the factors that influence the decision to purchase and etcetera. This empirical study is meant to explore the early findings in a real-world setting before conducting the main data collection phases. A survey approach is a popular tool used in the small scale of descriptive social research (Denscombe 1996). This survey study used the simple random sampling technique where each individual is selected by chance and is most likely to be picked like any other individual (Arber 2003).

3.6.2 Video Content Observation

According to Marshall and Rosman (1995), the observation method is defined as a systematic approach to describing artefacts, events, and behaviours set in the social setting of the study. The observation method is primarily used to obtain data for the study. The data consists of field notes done by the researcher when analysing and watching the respondents' videos. Field notes or fieldwork consists of a series of observational processes such as improving memories, active watching and looking, informal writing and interviewing, and also writing necessary and unnecessary details of events (Kawulich and Barbara 2005). This study will perform an observational process once the data videos from the participants had been received. The field notes are taken not only during the video analysis but also during the interview sessions conducted with the participants. Although there are recordings of interview details, the first field notes are still important to develop additional questions for the interviews apart from the planned questions.

The interview is in the semi-structured form. Hence, it is crucial to have additional impromptu interview questions to add more details. The additional details are somehow always open to discovering surprise elements in terms of the users' experiences and that output possibly have potential topics to be further explored and discussed (Wolcott and Harry 2001).

3.6.3 Interview

This method is used to get further details, explanations and confirmation of assumptions from participants based on the ethnographic user studies (explained further in Chapter 5). The interviews were meant to gauge the influence of customer reviews on their online shopping activity. The interviews are semi-structured to allow participants to elaborate on their own freely. The participants are allowed to explain what they were doing in the videos. Furthermore, at the same time, keeping the scope of the research by constructing a few questions.

After the process of constructing the interview questions is drafted, the researcher has to make sure the questions must be open-ended and neutral. The reason is that to avoid the unrealised influence of the interviewer to the interviewees. The questions must not sound like they are making an assumption, and instead make the interviewees openly tell, describe

and explain in their form of stories; without clues or hints that might influence or force the interviewees to give feedback based on what the interviewer expected (Rosenthal 2016).

FTake, for example, this question: "Can you tell me about your experience in using the online customer reviews system in XYZ website". The question is open for the respondents on how to tell the interviewer about their experiences when using the online customer review systems. The mention of where the online customer reviews system is situated is based on their video recordings showing which websites they were referring to when using the online customer review systems. There was only one task required by the respondent: to react and to describe their experiences. The questions must be clear and ask about one point at a time: experience. Thus, it will help respondents to both understand and answer the questions (Anderson 2010).

After that, field notes were taken while the respondents were answering the interview questions, and, based on these notes, a suitable and relevant impromptu question about the experience was created. For example: "You said it was pretty useful to get your desired information of the product from the customer reviews, what do you think of the organisation and presentation of their reviews?". Here, based on the response to the earlier question (for example), it drives the second point of question which is asking about their opinion: a "what do you think" question. From this second interview question, the respondents need to express their opinion about the organisation and presentation of reviews and still, one point at a time: opinion. The question was driven by the respondents themselves. It is crucial and beneficial if the interviewer could grab the opportunity to assess their responses further. However, the field note-taking should not be conducted if it may cause a distraction to the respondents. Keeping field notes minimal is the best advice (Rosenthal 2016).

Also, it is good to let the respondents know how they can be helpful in terms of giving a clear answer (Sutton *et al.* 2015). For example, this study asks a question about their feelings of satisfaction when using customer reviews. Before asking this question, it is best if the researcher tells the respondent: "It would be helpful if you can state what your feeling towards using the customer review system in ABC website is". Hence, it will be apparent to the respondents that they need to express their feelings, whether they like it or not, are

satisfied or not, and provide whatever adjectives that illustrate their feelings. This step is still following the rule: one point at a time.

Besides, it is also important to consider the knowledge-level and background of the respondents: are they professional personal buyers or an ordinary online shopper? It is beneficial to have finalised and carefully constructed the questions to avoid confusion among the respondents of a different background. Because the respondents usually rely on the interviewer when understanding the questions and answering the questions asked. If the interviewer ignores this point, there will be a possibility of frustration drawn from both of the respondents and the interviewer resulting in insufficient interview data (Harper 2005).

In addition, the interview session needs to be conducted not long after observing and receiving the data videos from the respondents. The period is crucial because it is easier for the respondents to recall their recent recorded actions. The interview should not be delayed long after the recording. The reason is to avoid the risk of losing track of the actions of the participants.

While interviewing, it is crucial also for the researcher to interview a casual conversation to encourage the respondents to feel comfortable, making a smooth flow of asking and answering session so the researcher could get the most out of it (Ramirez *et al.* 2013).

3.7 Sampling Technique and Sample Size

Planning the sample size is essential to obtaining sufficient data. There are two types of the sample size used in this study for then two phases of data collection (the exploratory study and the primary research). The exploratory study used a small-scale sample that was randomly selected as it was only for a pilot study. While for the primary research, the study used a small-scale sample, but non-randomly selected. This study used a purposive sampling method for the primary research. Purposive sampling is also known as purposeful or selective sampling. Purposive sampling is defined as a technique used by researchers in qualitative research for selecting and recruiting its participants that possess the capability to deliver detailed, in-depth and rich insights for data regarding occurrences, events, or phenomena of the investigated subject (Palinkas *et al.* 2015).

Based on the need of this study, the purposive sampling technique is most suitable it enables the researcher to gather the right targeted participants. The right targeted participants ultimately are important in order to provide strong support for data credibility and trustworthiness aspects. The future analysis output of the data from the targeted or purposive sample will reflect the actual, mostly accurate and purposively representing the participants themselves (Brink 1993). Furthermore, the primary research aimed at studying the behaviours of online shoppers in regard to the use of online customer reviews. The subject of interest is highly subjective and therefore a purposive sampling of participants is important to meet the qualifying criteria set by the researcher according to the study's need. The qualifying criteria will be further explained in detail in chapter 5 on primary research.

Before deciding on the sample size for this study, the researcher examined some methodological factors such as who could participate, how the participants were selected, how can the response rates can be maximised *et cetera* (Harper 2005).

Commonly, in quantitative research, the study would emphasize the importance of having a large sample size due to the generalisation purpose. However, in qualitative research like this study, generalisation is not the foremost objective that needs to be achieved. The primary objective of this qualitative based study is to develop an understanding of the meaning from the situation of the research subject (online purchasing) and what factors are associating the situation (customer reviews). Henceforth, the sampling procedure of this study is concerned with balancing the needs to acquire rich experiential data (from the users' insights), and not forgoing the equal representation of the users' insights across the population of the targeted participants (Tong *et al.* 2014).

Due to the condition of the sample size requirement in the qualitative based research, the 'data saturation' principle is presented. Data saturation is frequently used to aid a researcher in achieving sufficient evidence while analysing the qualitative data. 'Saturate' here means that there is no newer information found from the data sources. Despite the difficulty of reaching the saturation level, however, it is not impossible to be achieved (Anderson 2010).

3.8 Data Analysis

There are various definitions that define data analysis but Stemler (2001) summarizes that content analysis is a systematic and replicable technique that used to compress a bunch of textual data into

fewer content categories based on the explicit rules of coding process (Berelson, 1952; Krippendorff,1980; and Weber, 1990). However, as data does not only in the text form hence Holsti (1969) defined that content analysis is any technique used for making inferences by identifying specified characteristics of the messages objectively and systematically from data in textual information and also multimedia materials such as videos, drawings and music.

Data analysis allows the researcher to manage a large amount of data efficiently with relative ease but in a systematic way (Stemler 2001). Data analysis also usually involves in-depth analysis that looks for theoretical interpretations which could generate some new knowledge. Corbin and Strauss (2008) claim that such analysis shows a description that represents a well-constructed category, context development, and explanation of the process and change over time. Although it is thought that content analysis is only for qualitative data it also works for quantitative data (Neuendorf 2002) and there were times where content analysis has been used primarily in quantitative research methodology. The text data will be coded into a number of categories and described statistically. This technique is called the quantitative analysis of qualitative data (Hsieh 2005).

3.8.2 Emergent coding and Priori coding

There are two approaches to coding data that operate with slightly different rules. With emergent coding, categories are established following some preliminary examination of the data. The steps to follow are outlined in Hsieh (2005) and will be summarized here. First, two people independently review the material and come up with a set of features that form a checklist.

Second, the researchers compare notes and reconcile any differences that show up on their initial checklists. Third, the researchers use a consolidated checklist to apply to code independently. Fourth, the researchers check the reliability of the coding (a 95% agreement is suggested; .8 for Cohen's kappa). If the level of reliability is not acceptable, then the researchers repeat the previous steps.

Once the reliability has been established, the coding is applied on a large-scale basis. The final stage is a periodic quality control check. When dealing with a priori coding, the categories are established prior to the analysis based on some theory. Professional colleagues agree on the categories, and the coding is applied to the data. Revisions are

made as necessary, and the categories are tightened up to the point that maximizes mutual exclusivity and exhaustiveness (Weber, 1990).

3.8.3 Developing Codes

Typically, there are three types of coding units identified in content analysis methods which are;

- **Sampling Units**

It can be varying depending on the researchers make the meaning. It can be in the forms of words, sentences or paragraphs.

- **Context Units**

It can be a little bit confusing because it may overlap and contain many recording units. Context unit does not need to be independent or separately describable. Context units, however, have set physical limits on what kind of data you are trying to record. As the data is arbitrary or random or subjective, the context unit could be the entire sentences or paragraphs.

- **Recording Units**

It has no physical boundaries set where it could have more than one recording units which all the units belonging to one category.
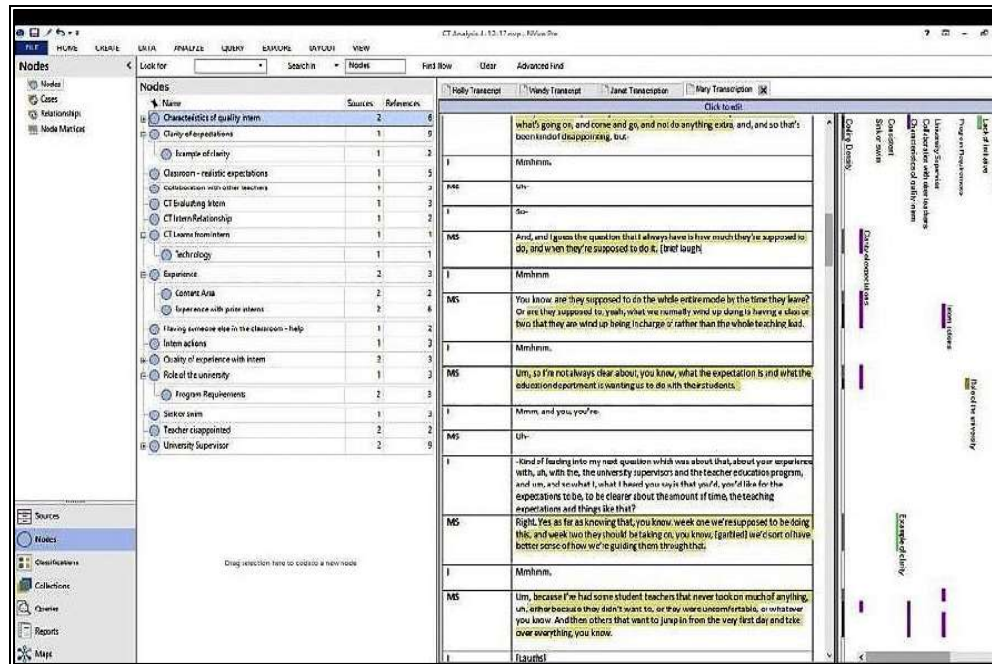
Figure 3.1: A Screenshot of Data Analysis Coding with Nvivo Software

3.8.4 Reliability & Validity of Data Analysis

Reliability is another challenge presented in qualitative data analysis. The same word might have different meanings in different contexts while there are different terms that might bring the same meaning. Besides, this becomes more complicated to interpret when it comes to body language, facial expressions, and gestures. The different people may act the same gestures when viewing at different times and, also, the same person could give different gestures after viewing at different times. It is all about human body expressions that are beyond the researcher's control, however essential to be captured, understand and analysed (Lazar, Feng and Hochheiser 2010).

Hence, when the coding process involves large sets of data, they are likely to be vulnerable to biases and inconsistencies. For quantitative analysis, in contrast, the data is bound to a fixed parameter or measurement setting; thus, they can avoid inconsistencies and biases.

As to cater to this challenge, the reliability process must be conducted and followed by specific ocedures together with various measurements used in evaluating the quality of the coding process. The ultimate goal of conducting a reliability check is to take control and make sure that the people code the same data in the same way (Weber 1990).

During reliability checks, two main dimensions aim to be achieved: these are the stability and reproducibility checks. The stability check is also defined as intra-coder reliability where the process involves examining whether the same coders rate or code the data in the same way throughout the coding process. For example, if the coder is asked to code the same data a few times, does each time result in the codes being produced consistently? If during the first time the code result was 50% on A, 30% on B, and 20% on C and the second time the result was 50% on A, 25% on B, and 15% on C, so that means the reliability check is seeming consistent and high. If the second time was 35% on A, 40% on B, and 25% on C, as compared with the first time's result, this shows that the reliability check is not consistent and very low. Hence, the coding process does not have robust and reliable codes which result in inconsistencies in reliability checks (Lazar *et al.* 2010).

WOn the other hand, the reproducibility check (which also means inter-coder reliability or investigator triangulation) examines whether the different coders would rate or code the same data in a consistent way. The significant difference here is it involves many coders, but the code only in a single chance. For example, if the result of coder 1 was 50% on A, 30% on B, and 20% on C, while the result from coder 2 was 50% on A, 25% on B, and 15% on C, and coder 3's result was 45% on A, 30% on B and 25% on C, there is consistency and inter-coder reliability is high. If by the contrast coder 2's results were 35% on A, 40% on B, and 25% on C, and coders 3's result was 25% on A, 20% on B and 55% on C (as compared with the result from coder 1), there was absolute inconsistency and the inter-coder reliability shown here is very low (Lazar, *et al.* 2010).

When the coding process is able to achieve consistency and high intra-coder reliability or inter-coder reliability, this means the codes used in the coding process are reliable because it is stable and reproducible. The coding would be solidly reliable if the same coder and the multiple coder groups are both well trained, given brief and concise instructions at the beginning coding process, and, most importantly, they understood every coding item. A test would be best conducted to see if the coder is able to code some data, then the result is being calculated to measure its' reliability, and if the result has achieved the desired reliability level, the coder could start on the formal coding process. If the result had not achieved the desired reliability level, more training, a brief explanation and proper instructions are needed until the coder is able to fully understand the coding items and start the test all over again before proceeding to the formal coding process.

Another critical part frequently performed is the reliability checks in order to detect any inconsistencies emerged earlier (Lazar *et al.* 2010). One of the most common reliability measures that are used to check the reliability level is by measuring the percentage of agreement amongst coders where the calculation involves in measuring the percentage of agreement from the numbers of cases coded the same way by multiple coders against the total number of cases. In equation form, it is illustrated in the following;

% Agreement = the number of cases coded the same way by multiple coders /

The total number of cases

Another measurement tool which is also commonly used in measuring reliability level is Fleiss's Kappa, and its equation is illustrated as the following;

$$K = (Pa - Pc) / (1 - Pc)$$

The K represents Kappa, Pa, which represents the percentage of cases which coders agree and Pc represents the percentage of agreed cases when the data is coded by chance.

3.9 Ethical Consideration

Ethical issues refer to moral values and principles which should be considered by the researcher during the study (Blumberg *et al,*. 2014; Cooper and Schindler, 2014). Punch (2005) draws attention to the importance of ethical issues when humans are involved in research as participants. Researchers must consider the confidentiality of participants and obtain their consent (Collis and Hussey, 2009). Cooper and Schindler (2014) specify the ethical matters should be considered by a researcher as follows:

a) The rights of the participants should be protected.

b) Sponsors of the research should be informed.

c) The research should be designed based on ethical standards.

d) The safety of the research team members should be provided.

e) Designed research should be followed.

This study has considered and fulfilled the requirements through all phases of the research. The participants were informed about the aim of the study and the importance of their participation. Also, the participants were assured that all responses would remain confidential and would be analysed at an aggregate level rather than an individual level. The participants were also assured that their participation was voluntary and they could withdraw from the survey at any time with no obligations. Furthermore, the data collection process was guided by the Coventry University Research Ethics Committee, and research was conducted after getting the approval of the committee. Additionally, in the second phase of the data collection, the ethical requirements were reconsidered and fulfilled.

Again, the process was guided by the Coventry University Research Ethics Committee; and research was conducted after gaining the second approval of the committee. The participants were informed about the purpose of the study and the importance of their participation. Furthermore, participants were assured that all conversations during the interview would remain confidential.

4.0 Summary of Chapter

This chapter has outlined the research design of this study and has discussed the adopted research methodology in detail. The different research philosophies were examined, and the reason for choosing a pragmatist paradigm was explained. Then, different research approaches were introduced along with the chosen approach. Next, this chapter examined different research strategies and discussed the reason for selecting the survey strategy and the adoption of in-depth interviews. After that, alternative data collection methods were considered; and selected methods were justified. Within the same section, the developments of instrument measurements and the questionnaire were presented in addition to the preparation of interview questions. Finally, this chapter has defined the research context; sampling strategies were introduced along with the chosen strategy and sample size. Additionally, pilot testing; analysis of the data; and ethical consideration were also considered. The following chapter presents the results and findings of this research.

Chapter 4

Exploratory Study and Technology Review

4.1 Introduction

Followed the methodology explained in Chapter 3, the study decided to conduct the research by employing Ethnographically-Informed Observation User Studies as the research strategy. While the data collection techniques decided to perform the data gathering for the study are video observation and interview. Before proceeding to the main phase of the study; the Primary Research, this study conducted a pilot study to obtain the preliminary data regarding the online shopper behaviours in online shopping activity in regards of the use of online customer reviews. The pilot study is called the Interview and Survey Study. The aim of the pilot study was to investigate how important the online customer reviews are to the online shoppers, from the real data of real online shoppers, a part of finding from the research papers as discussed in Chapter 2.

The pilot study, or after this known as the exploratory study, is crucial to pre-determine where the online customer reviews situated in the online shopping process. Together with the exploratory study is the technology review to further examine the findings of the literature. The technology review conducted as an observation of the researcher concerning the current and commercial online customer review systems interface and features. The purpose of observing the features currently available on the commercial customer review systems is to pre-examine how does the system features reflect the academic studies of online customer review system and functions. The following section will further describe the exploratory study and the technical review of this study.

4.2 The Exploratory Study – Determining the factors influencing decision making in online shopping: The Interview & Survey Study

This interview and survey study is being carried out as an attempt to study the factors influencing decision making during online shopping. The focus is on investigating the likeliness on how the customer review influences the purchasing decision. Also, to what extent it is being used as a tool of product information search by online shoppers.

4.2.1 Objectives of Study

1. To find out if and how other people influence customers through their reviews

2. To investigate how far customer reviews are used as a primary means of obtaining product information in online shopping activity.

4.2.2 The Interview and Survey Study

There are twenty (20) randomly selected respondents for this interview with age ranging 25-60 years old. The interviews were mostly conducted remotely via telecommunication media networks such as FaceTime via iPhone, Skype on Mobile and WeChat App video call. The venue where the interviews were usually done is in the living rooms. Other materials used in this interview are PCs, laptops, video camera, paper and pen for taking notes purpose. Procedures of this interview started with a schedule planned of whom, when and where to conduct the interview. Consent must be first obtained from the interviewees before interviewer's self-introduction took part to begin the session. The consent form was emailed first to the participants. Apart from the consent form, the purposes of the interview were well briefed in the email too. The questions are semi-structured to encourage the participants to lead during the interview, not the vice versa. The data collected from the interviewees are recorded in voice records and will be analysed soon after the completion of all the interviews. The respondents identified several factors. These were not pre-defined and were described spontaneously by the participants. Then those factors output from the first session are used as a basis for a more structured question on ranking the influence factors given on the second session.

4.2.2 Result

The participants were asked to rate the factors that influence their decision to buy in four ratings;

- 1 = Very likely
- 2 = Quite Likely
- 3 = Likely
- 4 = Not at all

Table 1.0: The survey and interview study scores result.

P/ F	F1	F2	F3	F4	F5	F6
P1	3	3	4	1	4	2
P2	3	1	4	1	4	2
P3	3	2	4	2	4	1
P4	3	2	3	4	4	1
P5	1	2	3	4	4	3
P6	1	1	1	3	2	2
P7	2	4	1	4	4	3
P8	2	3	3	4	1	4
P9	1	4	2	4	4	3
P10	3	1	2	1	4	3
P11	3	3	4	1	4	2
P12	3	1	4	1	4	2
P13	3	2	4	2	4	1
P14	3	2	3	4	4	1
P15	1	2	3	4	4	3
P16	1	1	1	3	2	2
P17	2	4	1	4	4	3
P18	2	3	3	4	1	4
P19	1	4	2	4	4	3
P20	3	1	2	1	4	3
SCORE n/80	44	46	54	56	70	48

The table above is the table of output and scores by the ten (10) participants in this pilot study interview. The scores of rank are calculated based on how much the factors as listed below influence the participants to purchase during online shopping. The higher the scores indicated the least potential to influence, while the lesser the scores showed the most potential influencing factors.

Legend:

P = Participant

F = Factor

F1= Price, F2= Customer Review, F3= Delivery charges, F4= Trusted seller, F5=Trusted brand, F6= Product Information (Authenticity, Quality, Features, Colour, Warranty, and more)

Rank 1= Very likely, 2=Quite likely, 3=Unlikely 4=Not at all

Score= Sum of rank scored.

n = Value of scores

The result shows that;

• The most potential factors to purchase is the Price of Product with 44 scores, then comes Customer Review with 46 scores, followed by Product Information with 48 scores, Delivery charges with 54 scores, Trusted Seller with 56 scores and lastly is the Trusted Brand factor with 70 scores.

• The ranking of factors to influence online purchase based on the calculation of the above scores is as follows;

1- Price of a product

2- Customer review

3- Product information

4- Delivery charges

5- Trusted seller

6- Trusted brand

The analysis result indicates that the Customer Review has become the second important factor that will influence decision making in online shopping. 60% of the respondents said they use Customer Review as a reference to know more about the product and to make a general evaluation on product value, lowering the shopping risk and measuring spending worthiness based on experiences of other customers. This approach applied especially by the participants who regularly shop with eBay and Amazon.com.

There are four most visited websites by the respondents; Amazon, eBay, Asda and Tesco while their mostly bought items are fashion clothing, baby stuff and household items. From the interviews' result, the importance of referring to Customer Review before making a decision is because the e-commerce sites that they regularly shop with, eBay and Amazon. Those two sites are using the Customer Review section extensively to attract, recommend and encourage customers' interactions.

In particular, Amazon.com, launching in 1996 has pioneered the online customer reviews, which offers the ability for buyers to recommend or critique the goods they purchased. Amazon.com built a community around products and exploits the advantages of online media and uses them to collect customer reviews (Brown, 2012).

As the customer has the power to influence other buyers with their comments, sellers' reputation and chances of getting a good impression from new customers are at stake. Hence this matter will eventually influence the sales activity.

4.2.3 Limitations of the study and future research

Naturally, the limitations of a study, some are inherent to the research method used while some related to the context. Some limitations related to the reliability of the measurement model context (Poyry *et al,.* 2012).

As for this study, the number of the sample used could be more than twenty participants, although it just a 'fishing trip' kind of interview. The small size of participants had only contributed six purchasing influence factors, whereas this study could get more if it has a larger sample. The next limitation is, to find volunteers or participants that come from various races or backgrounds among the university students or local people in Coventry. This study selects the participant sample among Malaysians and other countries' nationalities in Coventry and in Malaysia itself with only a few local people (known neighbours). In the future, it would be best to get various backgrounds of participants to gather more input, which this study may not discover.

4.2.4   Conclusion

This study of survey and interview was conducted in an attempt to study the real experiences in online shopping from real people or online shoppers, particularly. The study specifically intended to investigate if customer review would be one of the factors that influence the shoppers' decision making.

The result shows that the potential of the customer review in influencing the participants is quite high as it was ranked as second important after product information. Besides, the interview also has found out that customer review could also be used as a medium for product information search by the online shoppers, especially those who rely a lot on customer review before buying products. To sum up, the output of this 'fishing trip' indicates that customer could be the competitive advantage factor for a business to sustain and as well as Pro-forma for further research work.

4.4 The Technology Reviews of Customer Reviews System on the Commercial Shopping Websites

The following presents a number of screenshots of the current view of the online customer reviews systems from famous online stores or websites, particularly on the product. This section mainly about a review study on those customer reviews systems mentioned above to see the different features each system has, different ways of using, exploring and retrieving the information in the customer reviews. Besides, the review was also discussed about the interface in general to see the organisation and presentation of customer reviews in each online store's websites. By having this technology review, the study could explore more and in detail on the various designs of the online customer review systems. Each unique points of the systems will be described briefly alongside the description of how the users put on reviews on those systems.

4.5 Website Participants

The selection of websites based on the list of popular online retailers provided by ecombd.net on Top Ten Popular Online Stores in the United Kingdom (Hassan 2016).

1) Company A 'Customer Reviews' Page
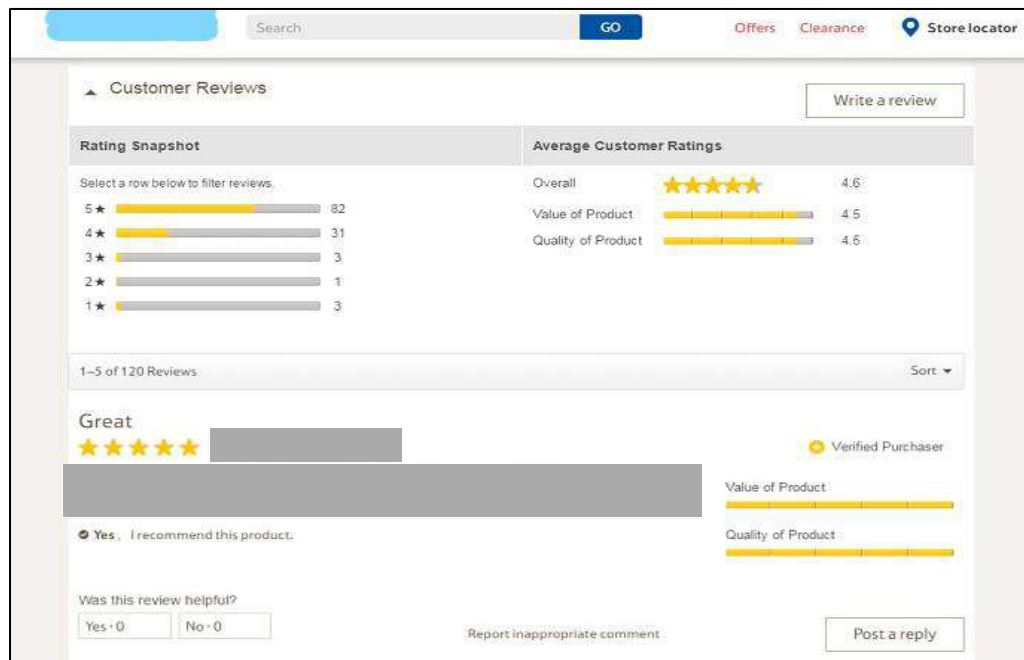
Figure 1.1 Screenshot of Company A's Customer Review System Page

Company A's customer review page shows three information. First is the 'rating snapshot' showing the number of reviews and rating for each individual review. Second is the 'average customer rating', indicating overall rating together with rating for value of product and quality of product. The third is the information of individual review. It shows customer-generated comment, rating based on value and quality of a product as well as whether the person is a verified purchaser.

2) The Company B Customer Reviews Page
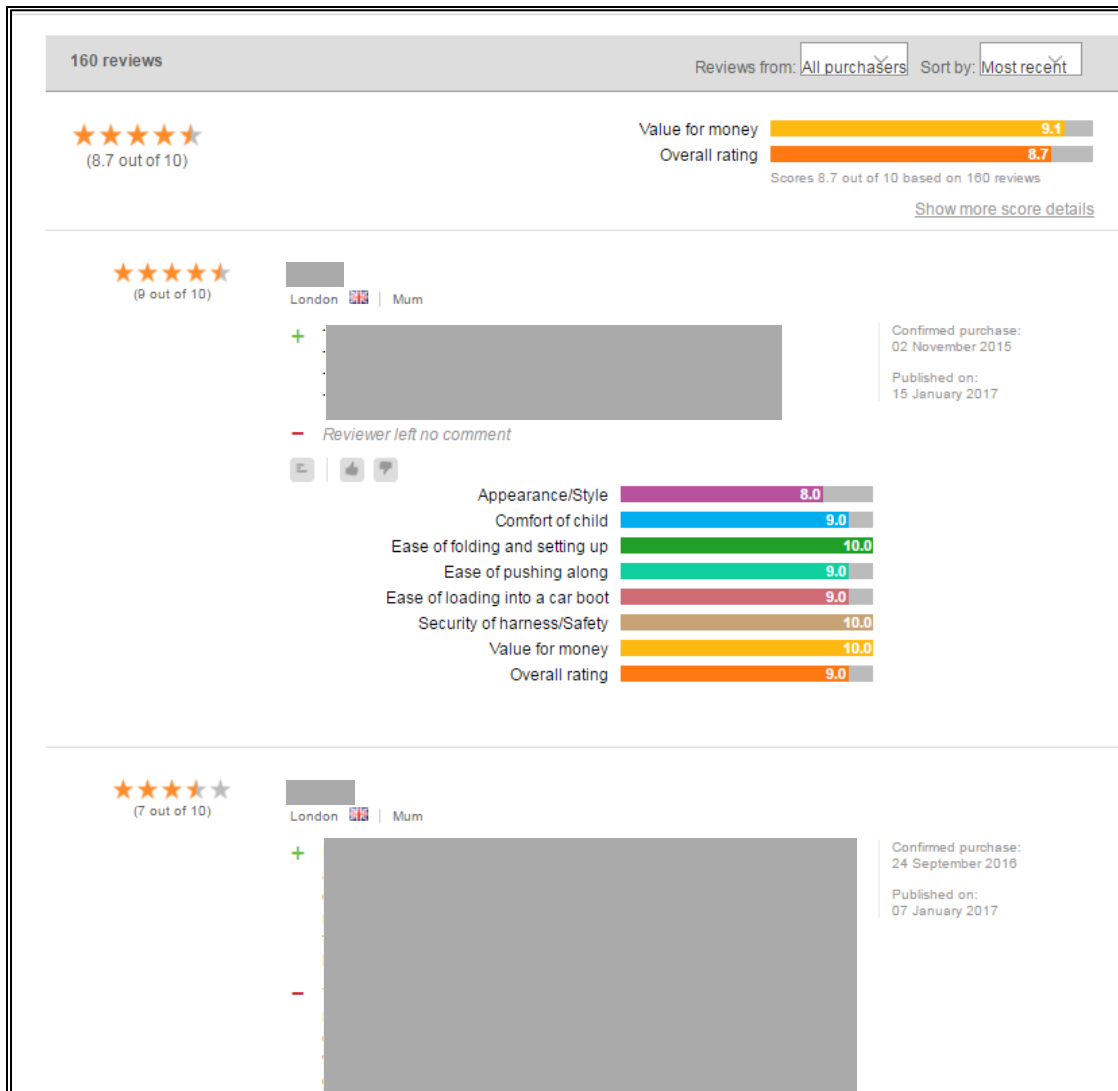
Figure 1.2 Screenshot of Company B's Customer Review System Page

Company B customer reviews page shows reviews based on the star rating (from out of 10 stars). Also, it rates products based on value for money, security, ease of use, comfort, appearance and overall rating. The purchaser can state any positive or negative experience when using the products.

3) The Company C Customer Review Page
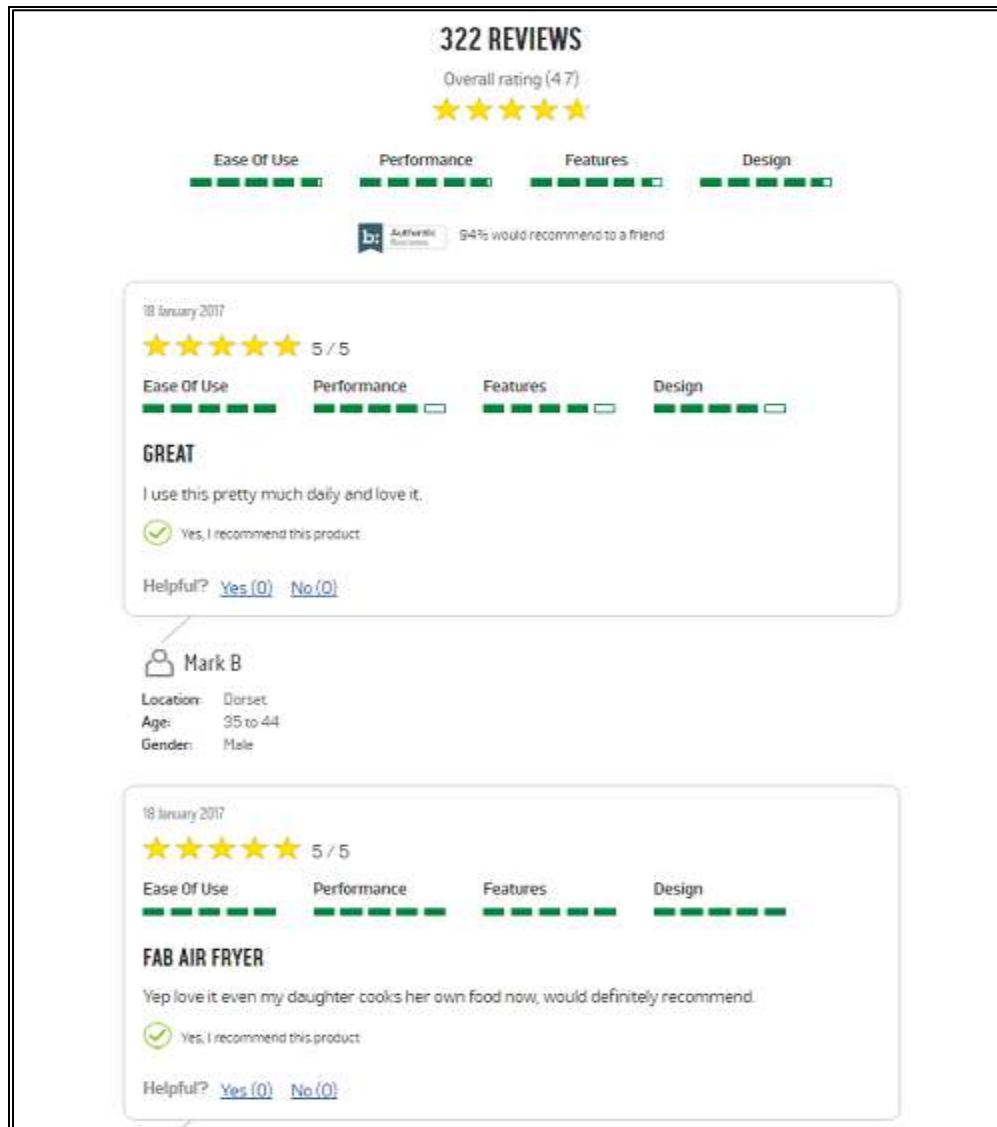
Figure 1.3 Screenshot of Company C's Customer Review System Page

Company C allows customers to rate products based on stars (out of 5 stars). Additionally, customers can rate the product based on ease of use, performance, features and design. Apart from written reviews, customers can enter personal information such as location, age, gender and name.

4) The Company D Customer Review Page
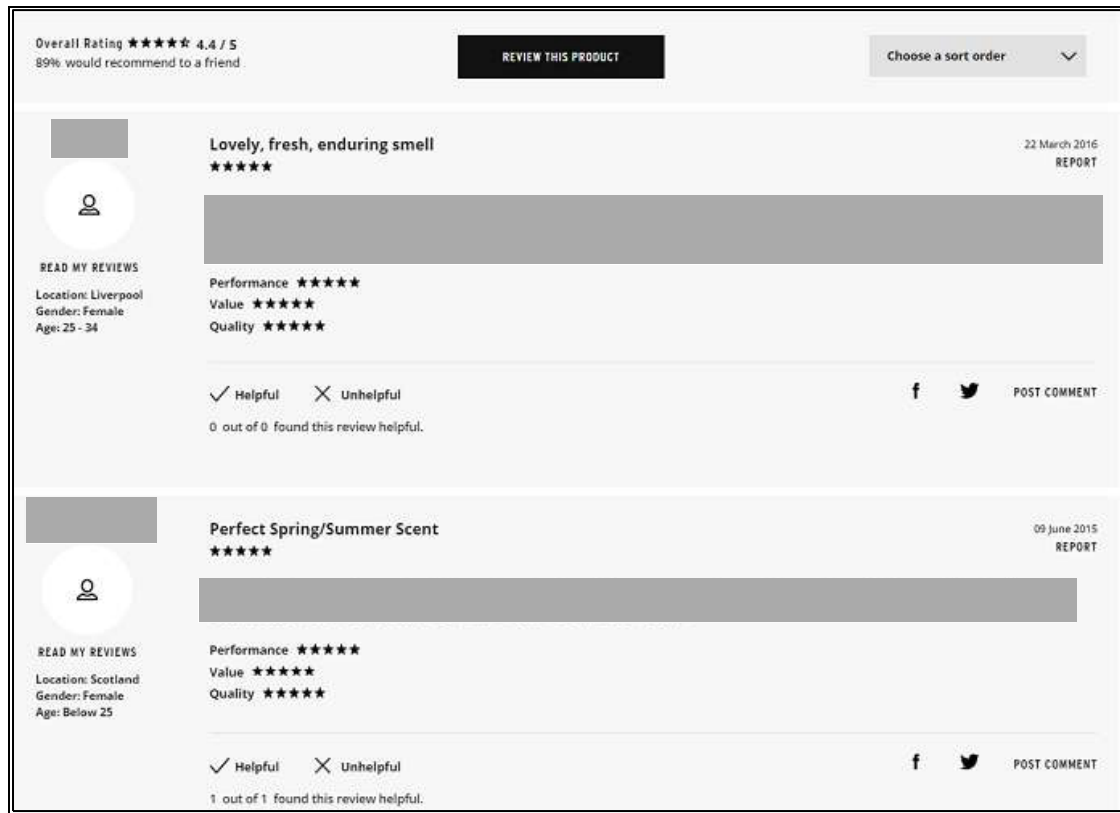
Figure 1.4 Screenshot of Company D's Customer Review System Page

Company D customers can put their personal information such as name, location, gender and age in the reviews. Overall rating and other ratings which include performance, value and quality are based on a maximum of 5 stars. Customers are allowed to enter their own title for the reviews, summarising opinion written about a product.

5) The Company E Customer Review Page
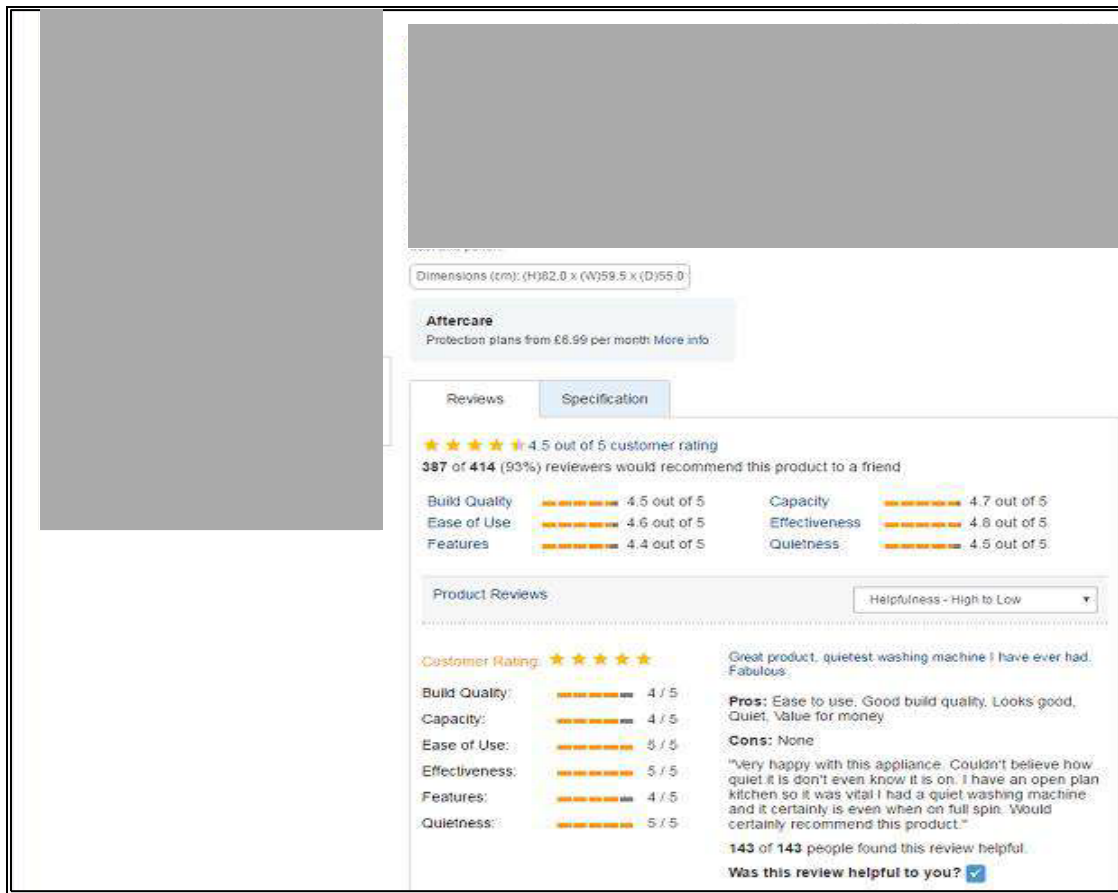
Figure 1.5 Screenshot of Company E's Customer Review System Page

The above screenshot from Company E page shows customers can rate products based 5 stars rating covering products build quality, ease of use, features, capacity, effectiveness and quietness. User is allowed to create a title to give an indication of their experience of using the product. Also, they can review the product by specifying the 'pros' and the 'cons'.

6) The Company G Customer Review Page
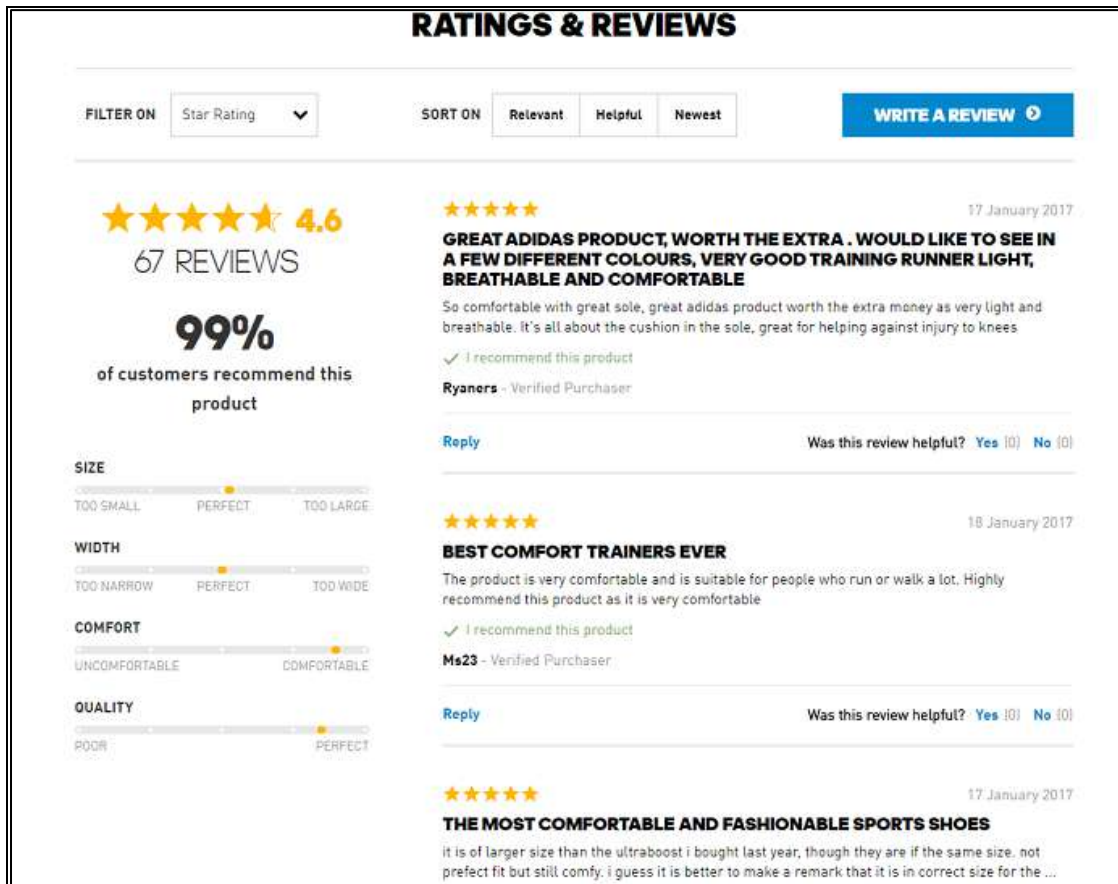
Figure 1.6 Screenshot of Company G's Customer Review System Page

Customers can rate product from Company G based on size, width, comfort and quality. Customers are allowed to create a title indicating their overall experience of using a product. Additional information that can be obtained from the review is the overall rating and the percentage of customer's recommendation.

7) The Company H Customer Review Page
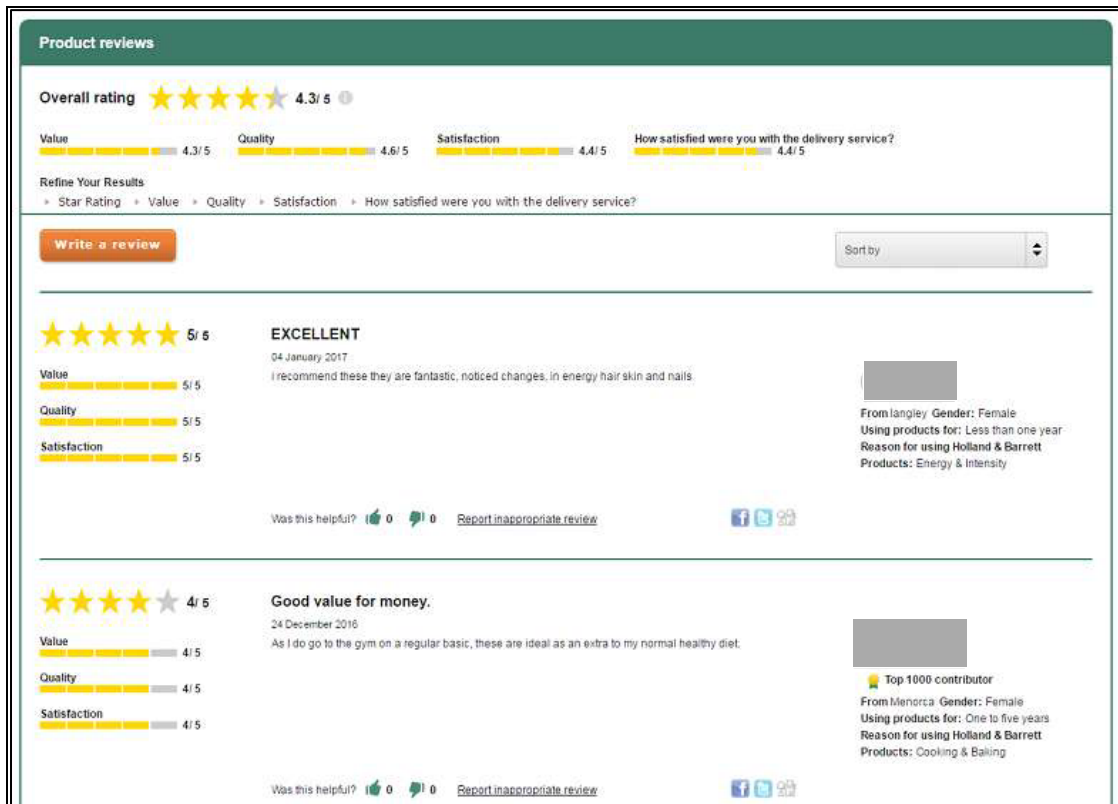
Figure 1.7 Screenshot of Company H's Customer Review System Page

Customers are allowed to rate products and services from Company H by indicating their experience based on value, quality and satisfaction. Additionally, other details are visible which include name, location, gender, time of using the product and the reason for purchasing.

8) The Company I Customer Review Page
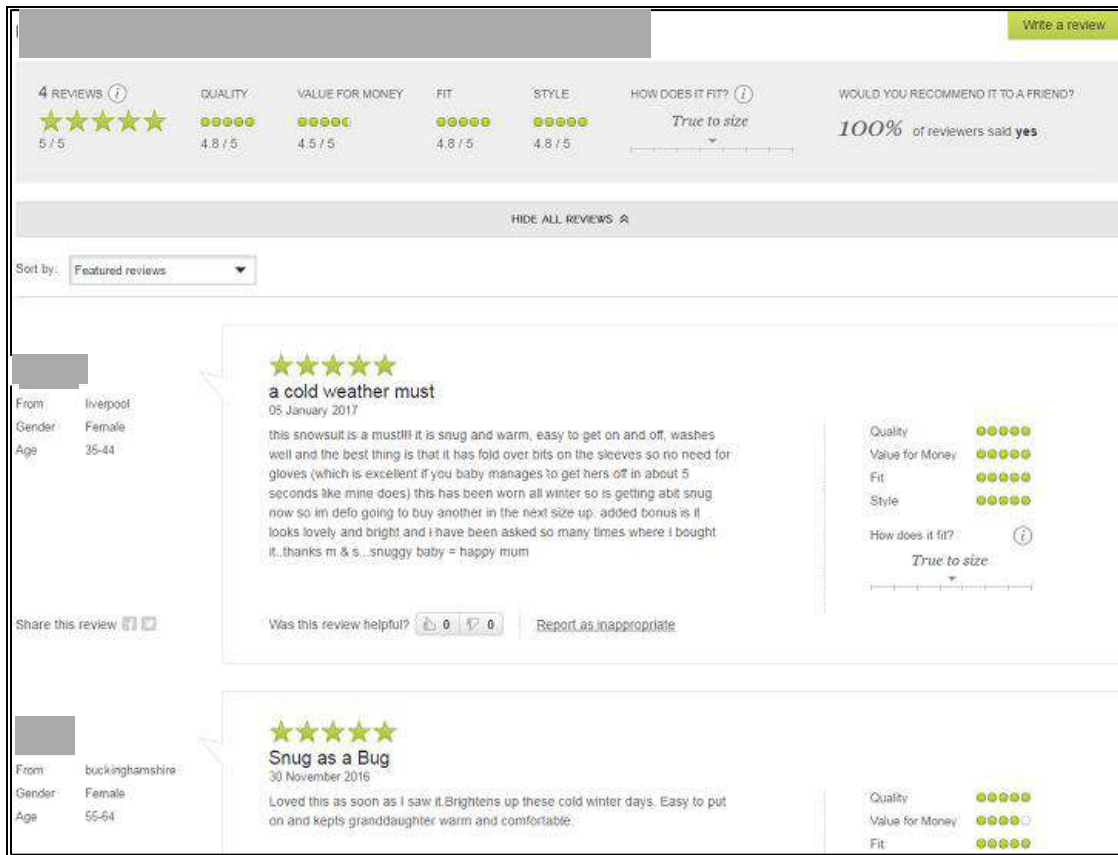
Figure 1.8 Screenshot of Company I's Customer Review System Page

Company I's customer review system page allowed a purchaser to rate products based on quality, value for money, fit and style. In addition, general indication of the products review is represented by using a star rating. Also reviewer has the option to state personal information such as name, location, gender and age range.

9) The Company J Customer Review Page

Figure 1.9 Screenshot of Company J's Customer Review System Page

Reviews for Company J is mainly based on a star rating. A product can be reviewed by indicating a rating from one to five stars. The title of the review will give a general impression on the product. This is followed by a description provided by customers based on their experience of using a product.

4.6 Summary of Technology Review

Based on the technology review conducted on the 10 most popular websites in the UK, none of the product-based reviews show the features of tags that represent the categories of reviews as found in the tourism based websites, that applied the tags concept to represent their various types of customer reviews.

Chapter 5

Primary Research

5.1 Introduction

Followed by the literature review presented in the previous chapter, there were several aspects of online customer reviews analysed, outlined and reviewed;

a) the organisation, management and presentation of online customer reviews

b) online shoppers' information search behaviours and preferences when using online customer reviews

c) the impacts, importance and influence of online customer reviews towards the online shopping experience

d) the elements of heuristics in online customer review systems

From the literature, this study intended to observe and investigate online shoppers' behaviours through real data. The real data was intended to be gathered from real online shoppers. Not limited to the four aspects as outlined above from the literature, the next process is projected to investigate the wider scope of online shopping activity such as online purchasing (if any), online browsing (for example; product or service surveys), finding information and many more other possible actions or steps taken and accomplished. However, in order to control the scope of this study, the main aim is focusing on identifying the involvement of online customer reviews in online shopping activity (purchasing and / or browsing) from the real data. Commencing the research gap as identified in the literature, many previous works and studies regarding customer reviews used experimental-base (machine learning, algorithms and etcetera) and survey approaches. This study, intended to use other than the usual approaches, as acknowledged in Chapter 3; the Ethnographically-Informed Observation Method. Specifically, this study has designed a Primary Research which consisted of two phases of Ethnographically-Informed Observation User Studies;

1)   User Study Phase 1: Online Shopping or Online Transaction Video Study.

2)   User Study Phase 2: Online Shopping and Browsing Activity Video Diaries Study

The reason for using the Ethnographically-Informed Observation method is to gain insights from the real online shoppers' points of view about their feelings, needs, interests and intentions while engaging in the online shopping activity. Especially, in regard to using or involving online customer reviews. However, in Primary Research, the expectations of the researcher to observe if there are any involvement of online customer reviews were not known to the prospects of participants. The purpose was to keep the participants' online shopping behaviours neutral. Besides, the purpose was to minimise the potential bias of the participants. For example, there are possibilities of participants who might purposely use online customer reviews in their online shopping activity as to fulfil the expectation of the user studies.

Primary Research is the main means of collecting the intended dataset for this study. The reason for conducting two phases of user studies is to allow this research to develop a deep understanding of online shoppers' behaviours, preferences and their interests in online shopping activity.

The first phase was designed to observe how online shoppers carried out their online shopping activity and how does it led to online purchasing transactions. What factors involved that influence online transactions to take place? Where there any other actions are taking place before proceeding to purchase? And many more to be observed from the online shoppers' behaviours.

The second phase was designed to further the investigation of the wider scope of online shopping activity; that is, the online shopping and/or browsing diary. This means that instead of a single online purchasing activity or online shopping transaction being observed as in the first phase, this study gets to know more the further it continued to study the diary of online shopping or browsing activity. The diary here is referring to a series of sessions, transactions, occurrences and events of online shopping or browsing activities. Therefore, the phase 2 user study aimed at immersing, understanding more and investigating further the reasons behind the behaviours, preferences and interest of online shoppers shown in their online shopping or browsing activities.

Further contents described the details of the primary research and how it was being conducted inclusive the targeted participants, who participated and what procedures involved. Towards the end of the chapter, the data analysis carried out from the primary research data is presented to comprehend the report on the whole process of the Ethnographically-Informed user studies based on the findings gathered. This study has attempted to critically evaluate the importance of information in online customer reviews and its employment in online shopping activity.

5.2 The Targeted Participants

To get the right subject for the study, the respondents must be suitable, appropriate and suit the most for the study purposes. Thus, a set of qualifying criterion and expectations were set. Since this study employed a purposive sampling technique, the reason for recruiting purposeful samples was to control the study's scope.

The followings are the qualifying criterions that the prospective participants shall meet.

I.   Regularly shop online

The first criteria aim at getting participants who engaged with online shopping activity frequently not occasionally. This means, buying online more than six times a year. The purpose is to strengthen the validity of the data received for this study. Any output of analysis and findings of this study can be supported by the strong background of the participants; regular online shoppers.

Besides, online shoppers who shop online regularly are usually familiar with the process of online shopping. Also, they have clearer intentions on what to buy, find and look for when conducting online shopping or browsing activities. More importantly, regular online shoppers are likely trusted online customer reviewers (Brun *et al,*. 2013). The chance to get more valid insights on the engagement between online shoppers and customer reviews is high if the study manages to get regular online shoppers as the participants.

II. Having the intention to shop online

The second criteria are important to capture more natural acts of online shopping from the participants. When the participants have intentions to do online shopping or browsing, that means they have the propensity to engage with online buying. Besides, online shoppers who intended to do online purchasing are also likely to be involved in the online information acquisition process. The resources for online information acquisition is inclusive online customer reviews (Chiang *et al,*. 2003). Therefore, this Primary Research is likely to get more data about the use of online customer reviews if it manages to get participants who have intentions to shop online.

III. Agree to record personal online shopping or browsing activity for the study purpose.

The third criterion is meant to secure mutual agreement for both researcher and participants. This Primary Research will include some personal recordings of behaviours, activity and actions which may or may not lead to any discomfort, risk and future issues for both researcher and the participants. Therefore, it is important to avoid any ambiguity to both researcher and participants by issuing a consent form. The consent form is a written agreement from the participants that they have agreed to record their online shopping activity despite it being characterised as personal to them.

IV. Being able to be reached by any medium of communications.

The fourth criterion is helpful to ensure the smoothness of the processes of the Primary Research. The participants must be able to be reached via emails, telephone, social media, mobile social applications and others. Not being able to be reached will disturb the further process and procedures of the Primary Research. Therefore, the participants' details such as valid email address, phone numbers, social media accounts and etcetera are taken for researcher's record and future use.

V. Agree to give consent on any form of input or feedback given to the study (video recordings and recorded interview)

The fifth criterion is evidently needed to claim the permissions granted by the participants themselves in order to protect the study in the future for any possible circumstances. The researcher will issue a consent letter with a guarantee to assure the potential participants that all the data given is strictly for the study purposes and nothing else. Likewise, the participants needed to give consent if they agree to participate.

VI. Agree to not violate study with inappropriate video contents.

This sixth criterion required the prospect participants to not violating the study by providing inappropriate content or feedback apart from what expected or requested from the study. The reason is to avoid the risk of jeopardising the study with irrelevant and improper contents which also leads to the waste of researcher's time.

5.3 The Primary Research Study Design

The Primary Research study design illustrates the overall flow of the user study. The processes involved in the study were designed to best gather the real data of engagement between online shopper with online customer reviews. In Primary Research, there are two phases of user studies involved as mentioned in the Introduction section. The following diagram shows the flow and processes involved between the two phases and how does each phase support one another to establish the strength, validity and reliability of the Primary Research output. The design also includes the selected data collection and data processing methods used to analyse the Primary Research data input and where they were situated in the whole structure. The following is Figure 5.1 that shows the diagram of Primary Research study design. Further explanations of the Primary Research Design available on the section in the **point 5.3.1.**
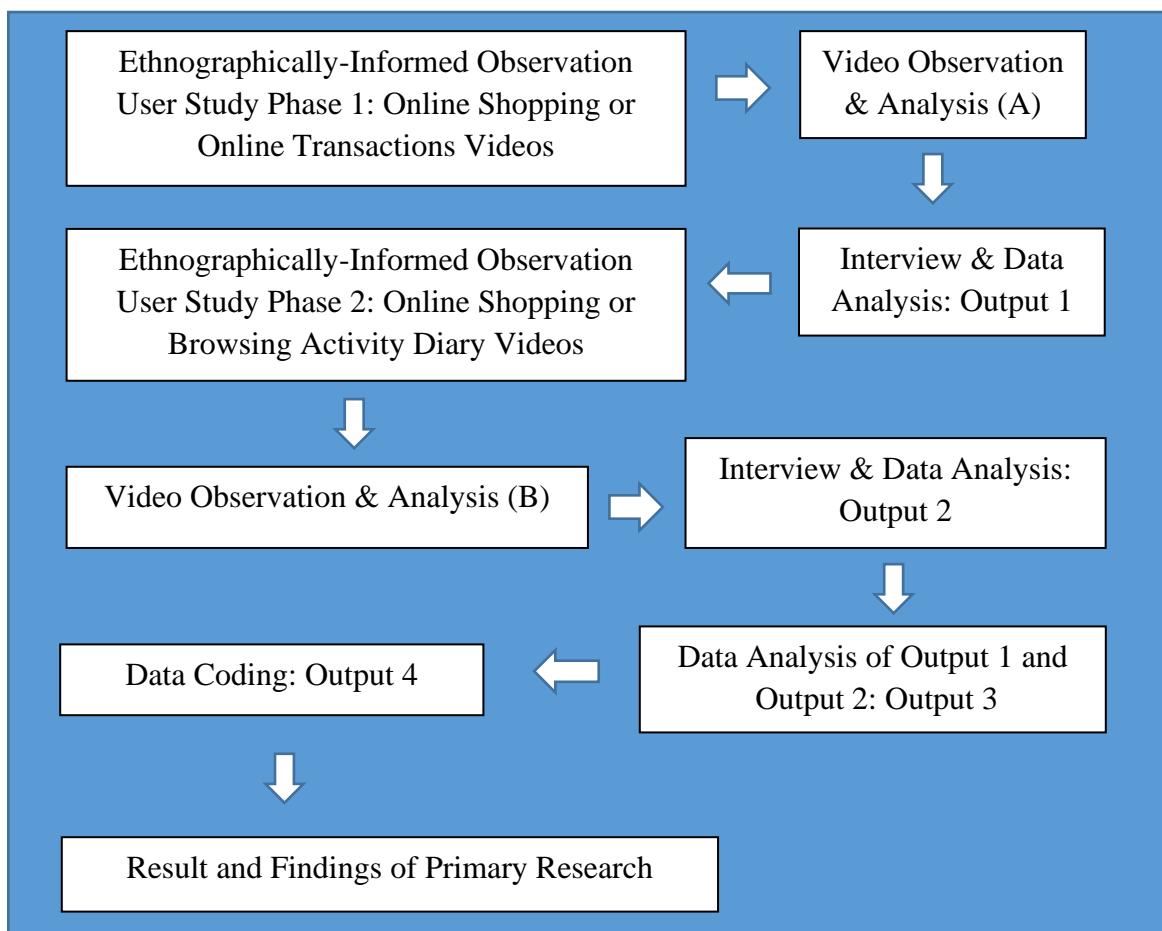
Figure 7b: The Research Design of the Primary Research

5.3.1 The Detailed Primary Research Study Design

I. Ethnographically-Informed Observation User Study Phase 1: Online Shopping or Online Transactions Videos.

The Primary Research starts with the first user study which is Ethnographically-Informed Observation User Study Phase 1. In this first phase user study, the data intended to be collected and studied are a number of videos of online shopping transactions from the real online shoppers. In this phase, one video will represent one or single online transactions or purchasing made by an online shopper. The main aim of designing this first user study is to identify if there is evidence on the involvement of online customer reviews in an online shopping or purchasing transaction.

II. Video Observation and Analysis (A)

Upon collection of the video data, each video will be observed and studied in detail. The process is called Video Observation and Analysis (A), to represent the video observation process is for the first user study. The main aim of this process is to capture and figure out the details that represent the behaviours of online shoppers while engaging in online shopping or purchasing transactions. This process ended with a report of observation and analysis based on the details observed from the videos. Both processes were done concurrently.

III. Interview and Data Analysis: Output 1

The research proceeds to the next process which is setting up interview sessions with the participants. The interview session aimed at gathering further details and feedback from the participants based on their behaviours in the videos. The input of explanations and justification behind each act presented in the videos will be further used for interview data analysis purposes. The data analysis result from the interviews in User Study Phase 1 is represented as Output 1. Output 1 will present the findings and analysis of online shopping or online transactions activity and behaviours of the participants. Based on Output 1, next process is sending invitations to the selected

identified participants in User Study Phase 1 to participate in the User Study Phase 2. Both processes were done concurrently.

IV. Ethnographically-Informed Observation User Study Phase 2: Online Shopping or Browsing Activity Diary Videos.

After the User Study Phase 1 is done, the Primary Research will proceed to the next process which is User Study Phase 2. Based on Output 1, there were a few of identified participants were called and invited again to participate in Ethnographically-Informed Observation User Study Phase 2: Online Shopping or Browsing Activity Diary Videos. However, the invitation to participation also open to other prospects who were not in the first user study.

The main aim of the second user study is to identify if there is evidence on the involvement of online customer reviews in online shopping or browsing activity. However, this time, the user study required a series of videos or simply called as a diary of their online shopping or browsing activity. This means, each participant will present more than one videos involving more than only a single online shopping or browsing activity. This second user study also does not necessarily require the participants to perform online shopping or purchasing. Simply record their online shopping or browsing activity diary only. However, the study does not restrict or limit the option, meaning even if the participants wanted to include their online purchasing transactions recordings, they would not be prevented from doing so.

V. Video Observation and Analysis (B)

After the collection of videos data, each video will be observed and studied in detail. The process is called Video Observation and Analysis B, as to represent a video observation process for the second user study. The main aim of this process is the same with User Study Phase 1; to capture and figure out the details that represent the behaviours of online shoppers while engaging in online shopping or browsing activity. This process ended with a report of observation and analysis based on the details observed from the videos. Both processes were done concurrently.

106

VI.   Interview and Data Analysis: Output 2

The researcher proceeds to the next process which is setting up interview sessions with the participants for the second time. Same with the User Study Phase 1, the interview session aimed at gathering further details and feedback from the participants based on their behaviours in the videos. The input of explanations and justification behind every single act presented in the videos will be further used for interview data analysis purpose. The data analysis result from the interviews in User Study Phase 2 is represented as Output 2. Output 2 will present the findings and analysis of online shopping or browsing activity and behaviours of the participants. Both processes were done concurrently.

VII.   Data Analysis of Output 1 and Output 2: Output 3

The next process involved further analysis of Output 1 and Output 2. The interview data analysis from both studies will be re-analysed again to find out the key information dimensions of the online shoppers (participants) while they were engaging with online customer reviews in their online shopping (purchasing and browsing) activities. This process is designed to provide input to the next process which is data coding. This process will produce a set of analysis called Output 3.

VIII.   Data Coding (Output 4)

Output 3 developed in the previous process is used in the Data Coding process aimed at producing another set of data analysis through a specified method called *Interrater Coding*. There are two types of coding involved in *Interrater Coding; Emergent and Priori Coding.* Both types of data coding were used purposely for reliability and validity checks. The result of this process is called Output 4.

IX.   Result and Findings of Primary Research

Based on the previous process, Data Coding, the final data analysis set was established to represent the overall result and findings of the Primary Research; Output 4. The Output 4 will be used for the next research stage; System Prototype Development.

5.4 The Procedures of Primary Research

After identification of targeted participants being set and the study design is developed, the study planned the procedures to guide the whole process of conducting the Primary Research from the beginning to the finishing phase. The procedures are also meant to control the Primary Research to follow the study design as developed. The procedures set are applicable to both phases of user studies. The procedures are important to be followed in order to keep the flow of the processes involved are well managed, planned and executed. The following is a figure that shows the diagram of procedures flow of the Primary Research.

Sending out Invitations to Participate the User

⇩

Respondents responded to Study

⇩

Respondents Send Online Shopping

⇩

Received Respondents' Online Shopping

⇩

Watch & Observe Online Shopping Videos Received and Write Observation

⇩

Analyse the Video Observation

⇩

Interview Respondents based on the Online Shopping Videos Presented

⇩

Analyse the Interview Data
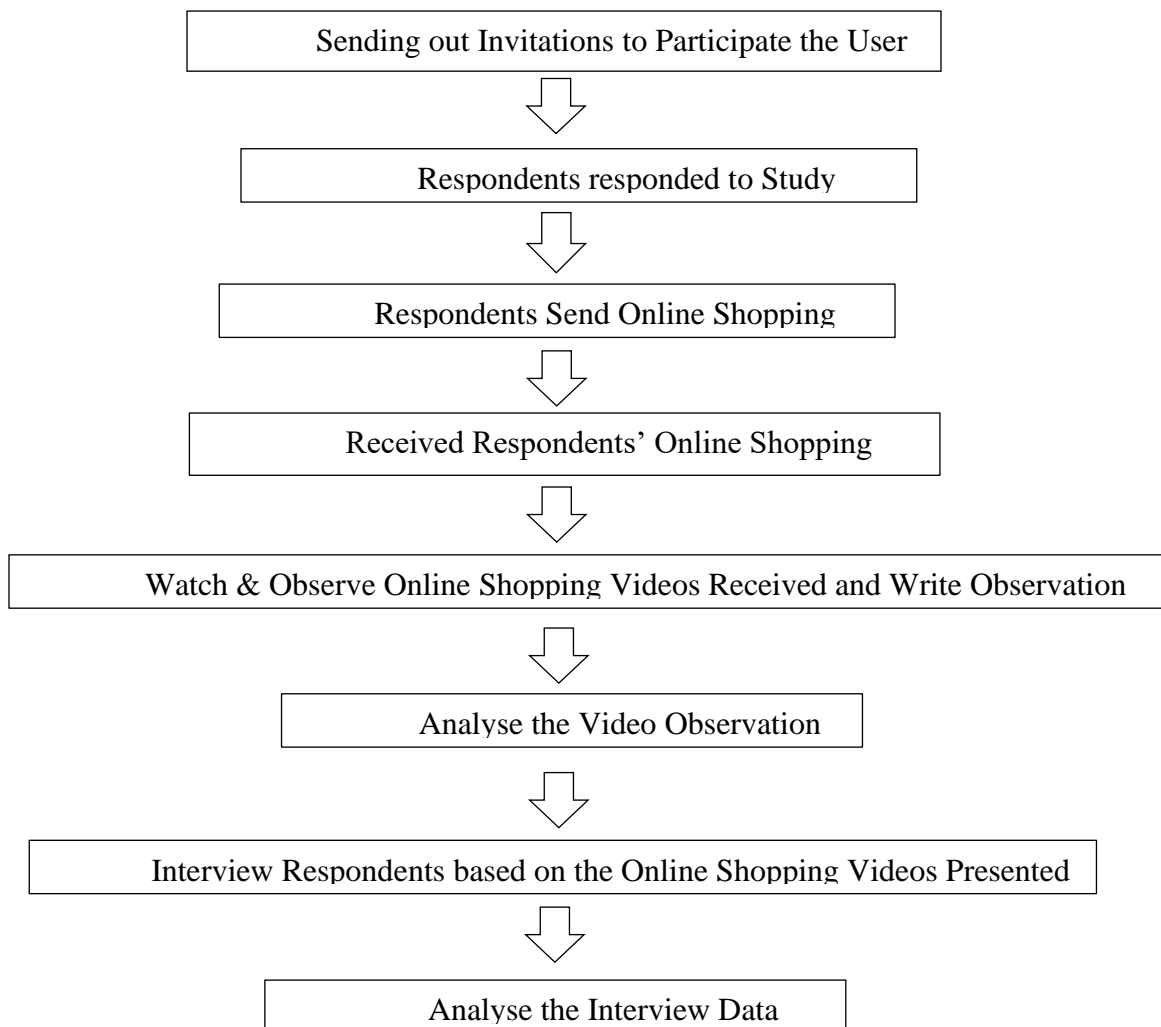
Figure 8: The Procedures of Primary Research

5.4.1 The Detailed Procedures

I. Spreading and sending invitations to prospective participants

The call to participate in this study was made and composed via emails, post on social media (Facebook and Instagram) and personal request to closed acquaintances via mobile social applications (WhatsApp, WeChat and Viber).

The study also aims to get natural reactions from the natural setting (online shopping activity) of the participants about their actual behaviours when dealing with online purchasing activity. Attach with the invitation was the consent form as it is ethically essential and obliged in data collection procedure.   Besides the consent form, the invitation also comes with certain conditions in which the prospects must be fit in. The details of the criterion and expectation from the candidates were explained further under the 'Targeted Participants' heading.

II. Respondents send online shopping videos

The responded prospective participants (or after this known as respondents who agree to participate) were later being given a period of time to make a recording of their online shopping activity. The time given for both user studies, Phase 1 and Phase 2 were two (2) months from the invitation dates. The invitation made at the days of the final week of the month where usually the payday comes in a couple of days later. The researcher believes that psychologically people have the buying power at most when or after their payday. Hence, the period was set strategically in order to get maximum participation from the prospects. Especially for User Study Phase 1 where the study required online shopping videos that involved real online purchasing transactions. Means, the respondents were really have performed online buying or purchasing.

III.   Received the online shopping videos

After the invitations were sent, the respondents are allowed to give their feedback. They began sending their videos as requested by the study. The videos were required to be sent via emails, the Dropbox and also through the Google Drive file access. The researcher will notify the video sender, or the respondents that their videos were

successfully received. The notification is important to mark the date to start watching and observing the videos for the researcher and also to start planning for the interview session with the participants. As for the respondents, the notification is important to acknowledge their submission and the possible range of dates for interview sessions. In the figure below, shows a screenshot on example of online shopping video received from the participants showing their online shopping activity recording.
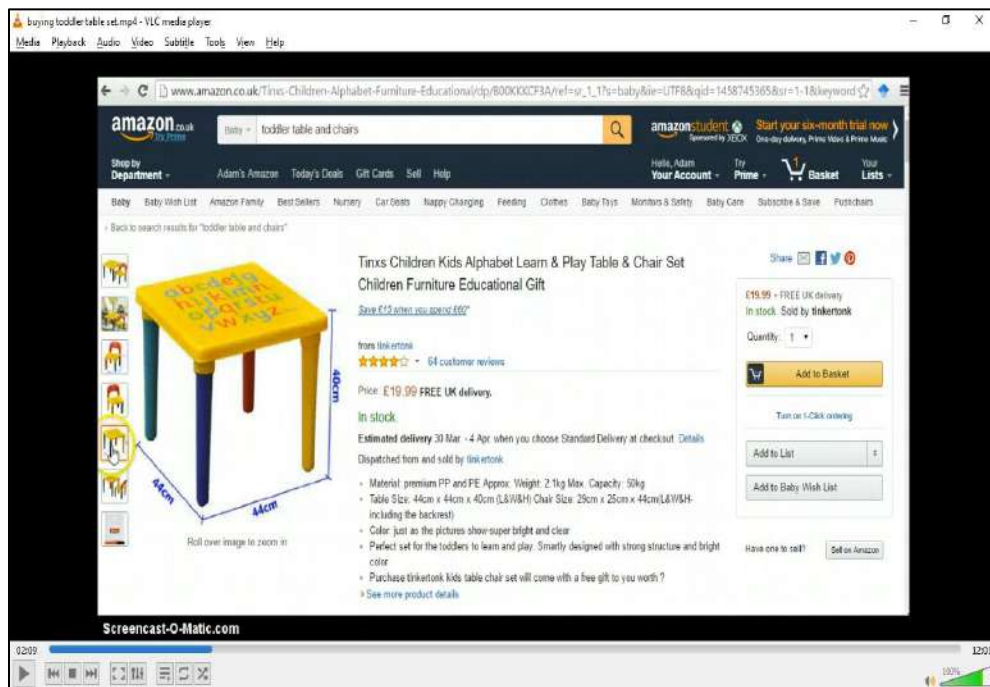
Figure 9 A screenshot on the example of online shopping video

IV.   Watch, observe online shopping videos and make observation report

After receiving all the videos, the researcher began to watch the online shopping videos received by the participants. There will be two rounds of observation for both User Study Phase 1 and User Study Phase 2. During the first time watch, the researcher was only watching without starting to make analysis or write down a note except for marking which video spotted the involvement of online customer reviews. Then the second watch began where this time, the researcher started to carefully point down some notes on any exciting events captured during the watch. Those captured events noted at what minute in the notes as that will be questioned

110

to the sender on the interview session later. This process is called observation. The observation made in detail in all the videos as to really see what the respondents were doing and what the reasons for doing it are. All those special captured moments where it might give some interesting insights or input to the study were carefully organised in a note.

The note was later being referred during the planning process for the interview sessions. Although the interview aims to have a spontaneous flow of feedback given by the respondents, the plan set still crucially important as the interview would not miss any good points for the study. There are a lot of interesting points gathered during the observation, which will be explained in detail in the next section, data analysis.

V.   Setting up an interview session with the participants

The interview plan was made right after the video observation process was done. The plan is meant to organise the interview in order to get the most feedback from the respondents. The interview was about knowing and understanding their acts shown in the videos and the reasons behind so. The interview did not take long after the respondents sent their videos. The reason for doing so was to keep their memory remains keen on what activity or acts they recently done in the videos.

If the interview were done too long after, the respondents might have forgotten why they behave such way in the video or what the reason behind all those acts recorded and etcetera. When that happens, it will lessen the chances to get the most accurate feedback from the respondents. The interview sessions arrangements were made via email discussion where the researcher provides slots for the respondents to choose or vice versa or whichever convenient for both parties.

The interview sessions were then taking place and conducted via Skype, and this required all respondents to have a Skype account. The interview was later being recorded by using on-screen online recorder software named Screencast – O – Matics when it able to capture and record the interview sessions. During the

interview as well, the researcher would share the laptop screen with the respondents. The reason is that the researcher wants to show the videos sent by the respondents so both can watch together.

During the interview, as it went on through, the video being played at a particular minute to relate to questions for the respondents regarding their acts on that particular scene. It is a way to encourage the respondents to recall what they were doing; hence, the researcher being able to find out why they acted in such a manner. The interview is recorded until the end for further input analysis process later. The following figure shows a screenshot of a Skype Interview between the researcher and a participant with their own video on play mode in the background screen.
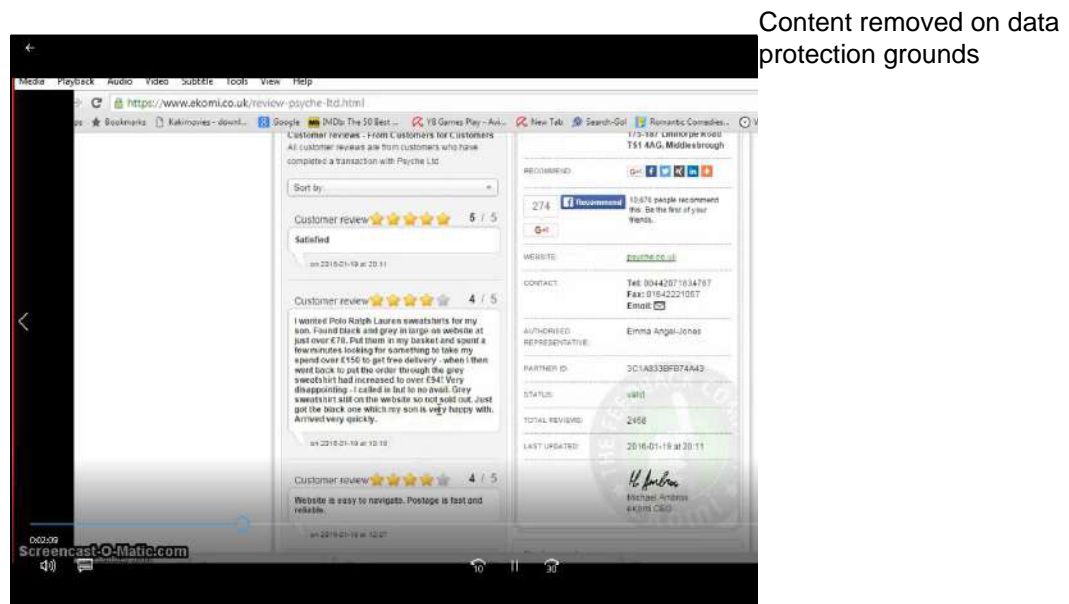
Figure 10 A screenshot on a Skype Interview Session with a participant

VI.   Write the analysis report on the interview

The most exciting part of this study where the researcher was listening to all the interview recordings and started to write down every single input. The excitement came when the study had something to be further researched on and analysed. The thrill of knowing other people's behaviour in the study, which was sometimes is

common and sometimes is varied or distinct in specific points, somehow giving some more ideas on what the study should look for next.

The input from the interviews was being organised by questions from the researcher and written in the interview transcript format. It is important as this transcript would be used as the source for the next step in data analysis; which is called Data Coding. The interviews script was later being referred again to make an analysis report and summary of each respondents' behaviour in online shopping activity. Each interview analysis report is filed together with the respondent's video, interview transcript, signed a consent form and their interview recordings.

5.5 The Ethnographically-Informed Observation User Study Phase 1: The Online Shopping Transaction Videos Study.

This study received forty (40) real online purchasing transaction videos from forty (40) respondents. The duration of data collection of this user study is three (3) months. The procedures set were followed while running this user study. All the data (videos) were observed and analysed. After the observation was done, the interview session took place. The interviews were planned not long, around three (3) to five (5) days after each participant sent their videos. The next following sections; the aims and objectives, participants' background, data collection, video observation and analysis, and interview data analysis will explain more about the findings in this User Study Phase 1.

5.5.1 The Aims and Objectives

The purpose of Phase 1 Primary Research is to identify if there are online customer reviews involved in online shopping or online purchasing transaction. If it were, this study intended to further investigate how the participants (online shoppers) engage with online customer reviews in their online purchasing / transaction activities. The following are the objectives;

- To study the behaviour of online shoppers (respondents) in their online shopping activity based on their online shopping video recordings.

- To find out if there is engagement between the respondents and online customer reviews in their online shopping (online transactions or purchasing)
- To analyse the role of online customer reviews in the respondents' online purchasing activity.
- To summarise the findings from the video observation and interviews of the respondents (online shoppers) based on their videos.

5.5.2 Data Collection

Some respondents sent their videos right after the invitations received. While some other participants were given the feedbacks a couple of weeks or months later. There were a few of them even requested for a few weeks more extension to submit their recordings.

Some other prospects requested to wait till the payday. That was because they were intended to buy some stuff but still on hold until the payday comes. The researcher finally decided to set three (3) months as the period of receiving the feedbacks (videos). After three (3) months, the researcher finally managed to get forty (40) participants with forty (40) videos for User Study Phase 1. Hence, the total numbers of videos received for the data collection for this study are forty (40) videos.

5.5.3 The Participants' Background

Majority of the respondents who agreed to participate in this user study have successfully met most of the criteria (as acclaimed and verified by the respondents during their interview sessions);

I. Majority of the participants are regular online shoppers. It means they shop online more than six (6) times a year. The average of online shopping conducts done by all the forty (40) participants are approximately twenty-four (24) times a year, which means at least twice a month. Some of the participants claimed that they do online shopping five (5) to (6) times a month inclusive grocery shopping. According to some of the participants, grocery shopping is a must and at least once in every month.

II.   Due to actively engaging with online shopping activity, all of the forty (40) participants who agreed to participate in this study verified that they had the intention to shop online within the estimated time given and agree to record the process for the study purpose.

III. All of the participants were also agreed to be reached by any medium of communications (emails, telephone, social media, mobile applications such as WhatsApp, WeChat and etcetera). Not limited to communications via telco tools and applications, the researcher also communicated with the participants on face to face meeting to discuss and talk further about any query regarding the user study. Some of the participants are the students of the same university where the researcher attended too. Besides, some of the respondents are also the researcher's neighbours.

IV.   Upon inviting the potential respondents, who have agreed to participate were aware that they were required to record their online purchasing transactions. Therefore, they were also agreed to give consent on any form of input or feedback given to the study (video recordings and recorded interview). Their consents allowed this study to further process the information or input given to the next phases of this study.

V.   Importantly, all of the participants agreed to not taking any chance of violating the study by providing inappropriate content or feedback apart from what expected or requested from the study

The followings are the further details of the respondents' demographic background who participated in the User Study Phase 1 (as acclaimed and verified by the respondents' during their interview sessions);

I.   Age and Gender

The participants' aged ranges between twenty (20) to thirty-five (35) years old. Thirty-five (35) of the respondents are female and the rest five (5) of them are male. The female aged range from twenty (20) to thirty (30) years old while the male aged range from twenty-four (24) to thirty-five (35) years old.

II.   Ethnicity / Nationality Background

All the participants come from varies ethnic background and countries. Thirty (30) participants are from Malaysia, two (2) from the United Kingdom, two (2) from Singapore, two (2) from Brunei, one (1) from China, one (1) from Pakistan and two (2) from Saudi Arabia.

III. Status

The participants are working-class people, local and foreign university students, homemakers and also professionals of their fields.

IV.   Online shopping regularity

Majority of the participants regularly shop online which have online buying records of more than six times a year.

V.   Internet and computer literacy

The participants are all IT and internet literate and have basic knowledge of how online shopping being conducted as well as online payment procedures or process.

VI.   Memberships

Most of the respondents have a membership with certain product brands such as Boots, Marks and Spencer, Body Shop and online marketplaces such as Amazon, eBay and Lazada.

From the criteria set, the majority of the participants already proof that they fit as the right participants for this study. However, there were a few participants' videos that cannot be used in this study because of the following reasons;

I.   No product purchase made

This study could not continue if participants involve in online transaction or purchase on service-base websites. This is because the main aim is to study the engagement of online shoppers with online customer reviews of the product, not service.

II.	No involvement of product online customer reviews

The study is about how people use online customer reviews on products, therefore, this study rejected videos that do not include or involve the use of product online customer reviews. The use of online customer reviews on service-based websites, would also rejected because it is simply out of the scope of study

Although the factors above that literally have disqualified a few participants from this study, those factors however, were not known to the participants. The rationale behind the restriction was to control and maintain the neutrality of their online shopping behaviours and actions. This is called controlled-scope of the study. The purpose of having this controlled-scope was to avoid *bias*. Since some of the participants are the acquaintances of the researcher, there is a probability and possibility of bias where the videos produced were based on courtesy to support the researcher's study. It has prevented the actual behaviours of the participants. Therefore, this would create bias when they might not act neutrally and rather make up some actions or behaviours in order to fulfil the main purpose of the study, hence the restriction.

5.5.4 Video Observation and Analysis

This section presented the report on the outcomes of observation made on online shopping videos sent by the participants in User Study 1. In this first phase of Primary Study; User Study Phase 1, there were forty (40) participants involved with one (1) online shopping video each. That means, there were forty (40) total videos received for the User Study Phase 1.

There are two (2) rounds of observation conducted. The first round observation was meant to identify any evidence of engagement between the participants and online customer reviews in the videos. Any participant who spotted to have engaged with online customer reviews in their online shopping activities will be selected to continue to the second (2nd) round of observation. In the first round of observation, the videos were played all along till it was finished. No pause, rewind, fast-forward and replay functions were taken place. There were no further details or notes taken too except for remarks by the

117

observer/researcher to indicate which videos will continue to the second observation and which were not.

After the first round of observation was done, there were thirty-five (35) participants and their videos were selected and continued to be further observed and analysed. However, the other five (5) participants were not selected because there was no evidence of engagement between the participants with online customer reviews spotted in their online shopping videos. Among the thirty-five (35) participants, twenty-eight (28) of them are from Malaysia, two (2) are from the United Kingdom, two (2) from Brunei, one (1) from Singapore, one (1) from Pakistan and one (1) from China. Majority of the participants were university students and the minority consisted of professionals and working-class people. The second round of observation was more thorough, detailed and each video was carefully observed. Most of the movements shown in the videos were coded, added details and notes (memos), and also narratively reported. However, the narrative reports were done on individual video file and document. As for this thesis, the summary of all the individual observation report does not narratively organise and rather on summarised point form.

The video observation process was done using MAXQDA software system. The system merely supports the video analysis process done digitally and more systematic. The software system allowed the researcher to capture the participants' behaviours and actions while conducting online shopping activity via coding system. The coding system is used to describe, characterised and represent the acts of the participants as online shoppers in their video recordings. The figure below shows a screenshot of a video observation process using MAXQDA system software and the codes generated. The following video observation report will also be presenting the results of observation on the content of the online shopping videos.

Figure 11 A screenshot of Video Observation process using MAXQDA software.

5.5.5 Summary of Video Observation Notes

The result of the observation of the video was made according to the codes identified based on what being observed and noticed by the researcher in the online shopping videos. The videos only captured the movement of the participants while conducting online shopping activities with some background sounds (mouse-clicking, fan, participants' cough and other natural sounds). There was no dialogues or conversations recorded because the videos were about individual online shopping activity only. Therefore, basically, only one person involved in each video. The researcher wrote down notes in *memo* form. A memo is used to indicate initial finding where the observer (researcher) found useful and interesting. The memo will also be used as the point for the researcher to recall previously observed incidents that were similar to what the researcher currently observed. Therefore, memo is also used as the informal codes before the researcher came to name the codes formally.

The following are the further details and description of activities observed reported according to the codes extracted. The codes extracted were named directly reflecting the actions or activities shown and presented in the videos. The reason was to reflect the memo written down on the researcher's codebook or notebook. Besides, by naming the code simplify the actual actions observed about the participants in their videos possibly capable of producing efficient guide for the researcher when it comes to observation report summary writing and individual video observation report writing. The observation report of individual video was done separately and in the Appendix, this study has attached a few samples of individual videos observation report before summarizing all the videos' observation reports here. The codes emerged as reflecting or representing the acts displayed and shown in the videos. The following are the summarised details of observation reported by the codes generated. The reports are fully based on the observation of the researcher and no code was generated out of what being observed from the videos. The following figure shows a screenshot on codes generated list generated during video observation using MAXQDA software package.

Figure 12 A screenshot on codes generated list generated during video observation using MAXQDA software package.

There are thirty (30) codes extracted from all the thirty-five (35) videos in this Phase 1 User Study as the following;

1)   Search for products

2)   Filter product search

3)   Search for other products

4)   Select and view product

5)   View other product in another tab

6)   Scroll down the product list

7)   View product description

8)   View product image

9)   View enlarged product image

10)   View the question and answer section

11)   View customer review page

12)   Select the next customer review page

13)   A select top critical review

14)   Select high rated review

15)   Select low rated review

16)   Search for review

17)   View expert review

18)   View video review

19)   View forum review

20)   View seller profile

21)   View seller history

22)   Select other sellers

23)   View or select product option

24)   Select product from 'other recommended product' option

25)   Observed Compare Prices

26)   Add product to watch list

27)   Add product to cart

28)   Fill up the payment form

29)   Make payment

30)   Review purchase details

All of the thirty (30) codes generated above will be explained further and detailed in the following section. Each of the code will be named as 'Code (number) – code name'. Majority of the codes are attached with a figure of screenshots showing the actions represented by the codes.

1)   Code 1 - Search for Products

In most of the videos, this is the first action recorded by online shoppers (the participants). During this time, the participants were searching for products that they wanted to find. There are two ways doing the product search. Some of the participants searched for products on Google before selecting which store from the result appeared. The Figure below shows an example of a video screenshot of product search on Google browser.
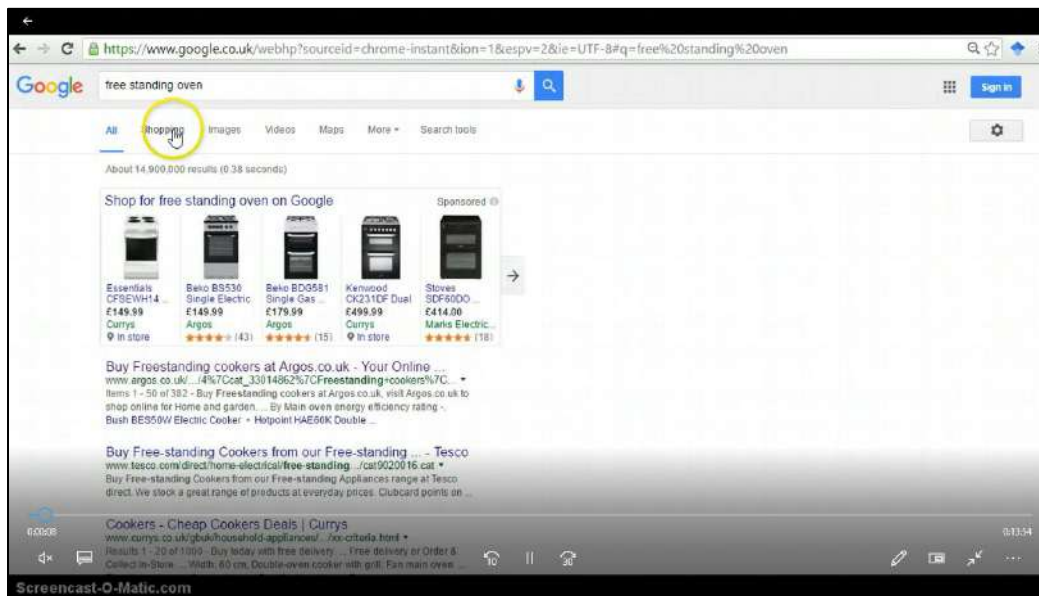
Figure 13 A screenshot of a product search on Google browser.

Another way is, the video recording already started on the specific online store or online market places website such as Body Shop and the participants continue on product search step. The Figure below shows the screenshot on video that shows participant did a product search on a specific online store website; The Body Shop
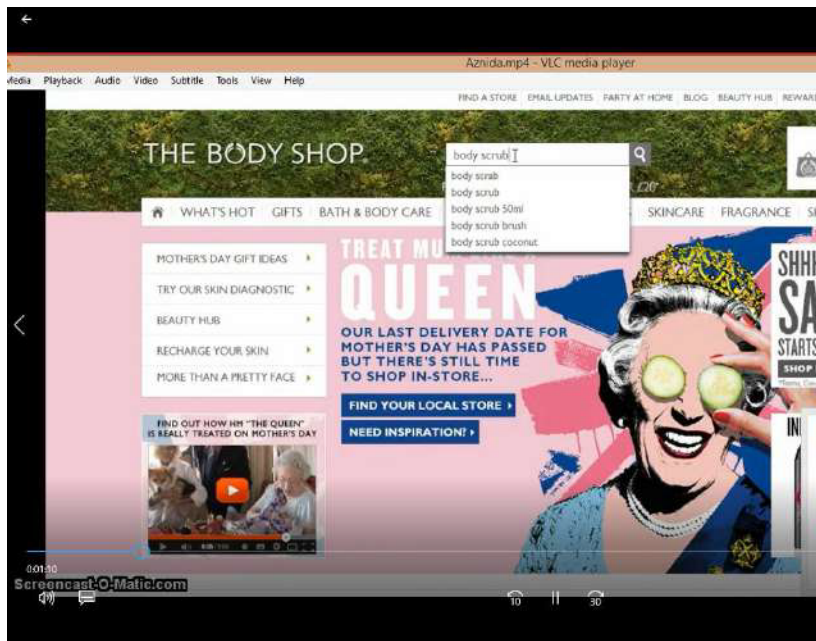
Figure 14 The screenshot of participant did a product search on a specific online store website.

A few of the participants will type the name of products they wanted either by brand or the type of product. However, some of the videos also started by searching on online store first such as Amazon and eBay UK. During the product search process, some of the participants conducted this process once, some did twice and s few too that searched for more than 3 times. Some of the participants were looking for the same item in a few different online stores. Some of the participants looking for the same item or from a few different sellers in one market place such as Amazon UK. Some of the participants were looking for a different type of products from multiple online stores. In this study, the product search process done by the participants spotted on the following seventeen (17) online stores and market places as on the list;

1) Amazon UK
2) eBay UK
3) Lazada Malaysia
4) The Body Shop
5) Tesco
6) Mothercare
7) Marks and Spencer

8) Boots

9) Sainsbury

10) Debenhams

11) Selfridges

12) Toys R Us

13) Dr Martens

14) Argos

15) Groupon @ Fave Malaysia

16) 365 Games UK

2)   Code 2 – Filter Product Search

During this process, some of the participants were spotted on doing filter while searching for a product. This was done especially when the participants were already on an online marketplace such as Amazon, eBay UK or online store such as Argos. The filter elements selected by the participants as seen in the videos are such the followings;

1) By Price; Low to High

2) Buy It Now

3) Mostly Recommended

4) Best Match

5) By Item Condition

6) By Brand

7) By Product Range

8) By Star Rating

9) By Concern

10) By Sellers

This is the most common and most frequent filter element used by the participants in this user study, Price: Low to High. The Figure below shows the screenshot of a product search that used price range from low to high as the chosen product search filter.
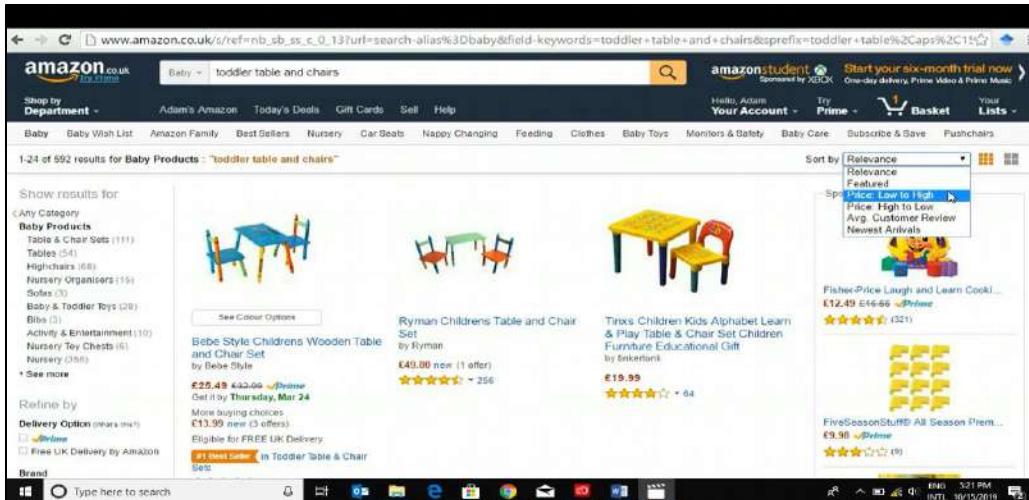
Figure 15 The screenshot of product search that used price range 'from low to high'.

The figure below shows the example of a participant who filtered his product search to 'Buy It Now' option which means he chose to view product that is available for 'Buy It Now' option only.

Content removed on data protection grounds
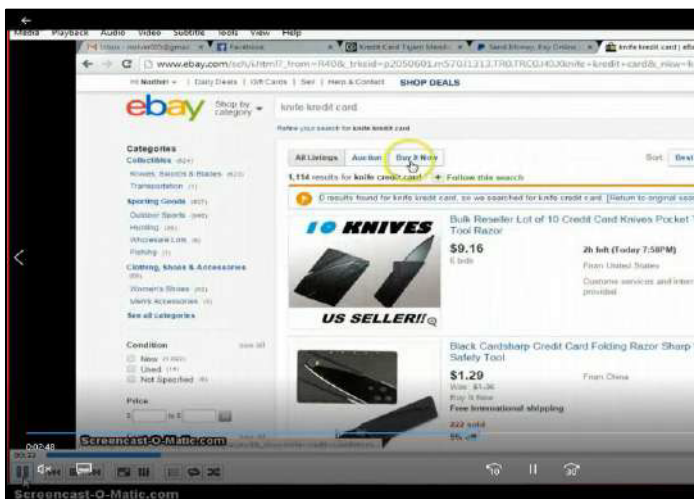
Figure 16 The example of participant who filtered product search to 'Buy It Now' option

3) Code 3 - Search for Other Products

In this process, some participants were spotted to then conducted the search for other product. This means, after the participants viewed some products, they intended to search for a different product. When the participants did another search, usually it shows that the

125

participant had more than one product searched for purchase in the online shopping videos sent. The search for other products was seen done in a few ways. The first one is searching for another product in the same online store. The second one is searching for other product from the same seller. The third one is searching for the other product in Google browser and other online stores. However, based on the researcher's observation, most of the participants searched for other products on Google Browser to see other products from other stores.

4)   Code 4 - Select and View Product

In all videos, all of the online shoppers or the participants were observed doing selecting and viewing the product that they have chosen. During this activity, none of the participants opened the only tab for one product. There were many tabs opened while the participants viewing the products they wanted to see and/or buy. The participants were observed that sometimes they viewed the product for quite a while, some of them were having a quick view. While viewing the product, some participants were observed to move around their mousses going a little up and down of the product page to see content of the full page. Some participants were seen moving towards the price, description, image and other details on the page. Then, some other participants were also static on the product page for some time before moving or doing the next action or step. The figure below shows a screenshot of an example of a participant who was viewing a jug and tumbler set from the Marks and Spencer online store.

Content removed on data protection grounds
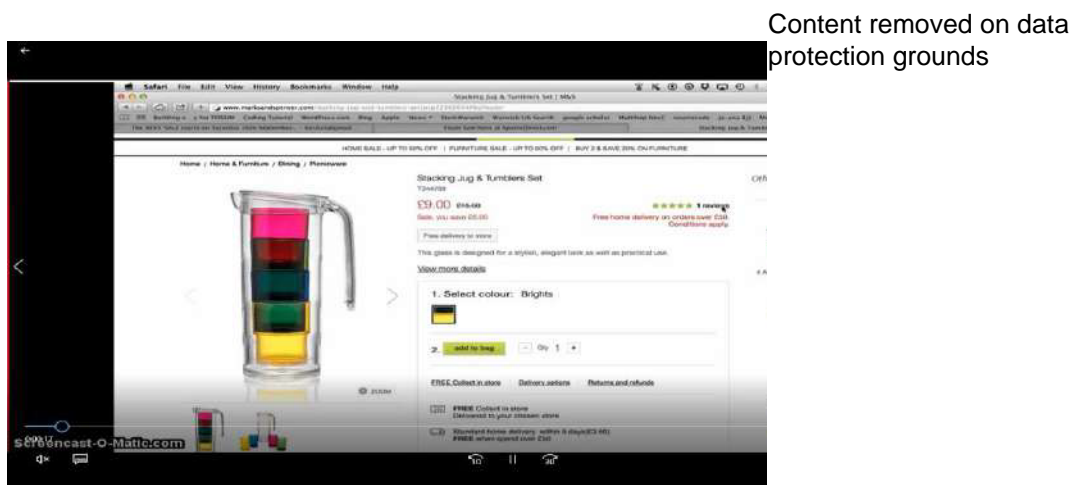
Figure 17 A screenshot of a participant viewed a product page.

5) Code 5 - View Other Product in Other Tab

The researcher noticed that most of the times, most of the participants as well, after they searched for product, and the results came in a list, the participants will scroll down the list and started to right-click on a few items on the list (same product), to choose the option of 'view product in other tab'. Sometimes, the option was 'view link in another tab'. The figure bellows shows a screenshot of one participant who selected 'view link in another tab' while viewing the items in the item list. Some other participants, who did not search for a specific product earlier, and went to a specific online store home page such as Toys R Us website, instantly went scrolling down the item list on the homepage and did right-click to a few items that caught the participant's interest. During the right click, the participants chose the 'view item in another tab 'option. The respondents usually viewed the product from one tab then jumped to other tabs then back to the first product tab and repeated the change tabs' view. In most of the videos, the participants show that there were many tabs opened while they were conducting online shopping or purchasing activity.

Content removed on data protection grounds

Figure 18 A screenshot of the participant clicked on 'view product in another tab'.

6)   Code 6 - Scroll Down Product List

The participants were seen on scrolling down the product list after they were performing product search activity. There are a few types of layout on the product list. Some products such as in Amazon appear on a basic list type where the product sorted one item on each one single line or lane or space. The basic list type allows the online shopper to scroll all items downward or upward. In some other online store websites, the product list appeared on a grid-style such as in Lazada Malaysia website. This grid sorted a few items in a single line or lane or space. The example of grid-style item list is as in the figure below. The figure bellows shows a screenshot of a participant was scrolling down to view the item list in the grid.

Content removed on data protection grounds
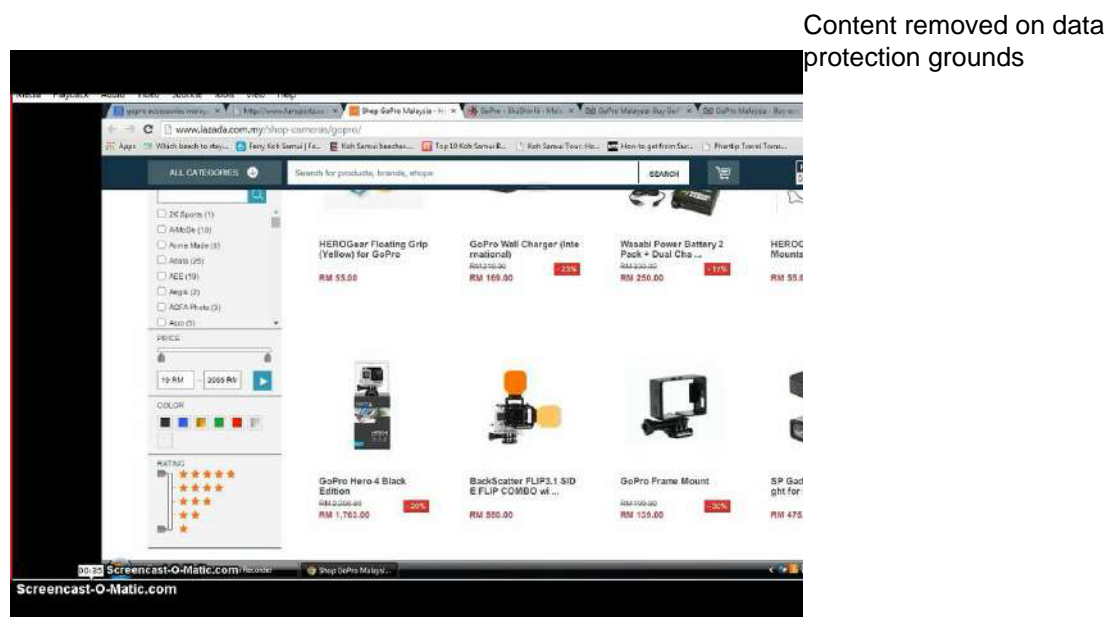
Figure 19 A screenshot of a participant was scrolling the item list in the grid.

7)   Code 7 - View Product Description

Majority of the product page in online store websites or online market places included the product description section. The product description is either situated under the product image, or next to the product image which is usually on the right side of the viewer. Based on the observation, all of the participants viewed the product description while viewing product. There are a few types of product description layout designs.

The product descriptions can be in a detailed format where a paragraph of descriptions placed next to the item. Sometimes, there is a point-form of product description situated in the next product image and the detailed ones were placed under the product image. This layout is commonly found in Amazon and eBay UK sites. Some of the participants will move their cursor while reading the product descriptions and some did not and remain static on the product description section for quite a while. The following is the screenshot of an example of product description for The Essential One web store page.

Figure 20 A screenshot of an example of a product description viewed.

8)   Code 8 - View Product Image

The researcher observed and found out that almost all of the participants will view the product image. The researcher noted that the cursor is moved around the product image or click on the product images to further see the other product images or pictures. However, some of the participants also noted for not viewing the product image but rather went to the product description. Based on the observation, almost all products searched and viewed by the participants, also had the product images viewed too. The following is a screenshot of a participant viewed on the product image.
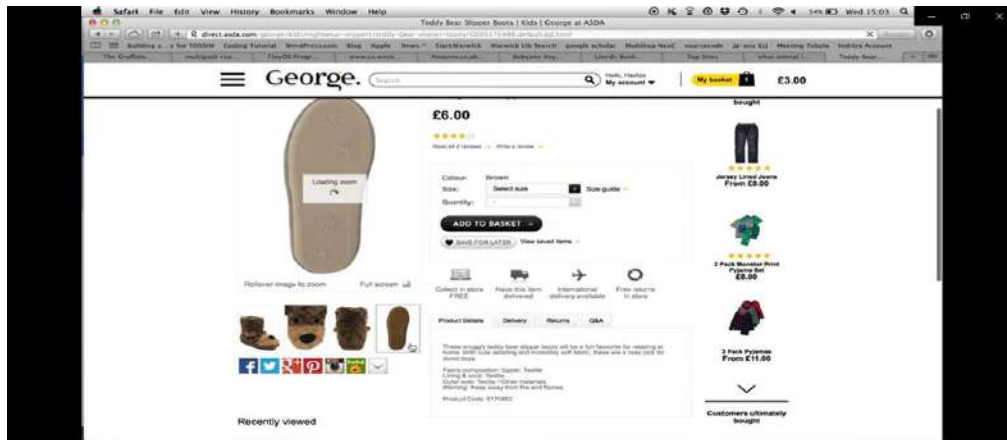
Figure 21 A screenshot of a participant viewed on the product image.

9) Code 9 - View Enlarged Product Image

During the observation, the researcher found that the participants not only viewed the product image as in its size that appeared on the website, but also viewed the image in an enlarged mode. Majority of the participants enlarged the image while viewing the product images. However, there were also some of the participants who did not enlarge the product image while viewing the products. The participants were also spotted to move around the product image while enlarging the view to see a close-up of the products. the figure below shows a participant enlarged the product image on the product page in eBay.
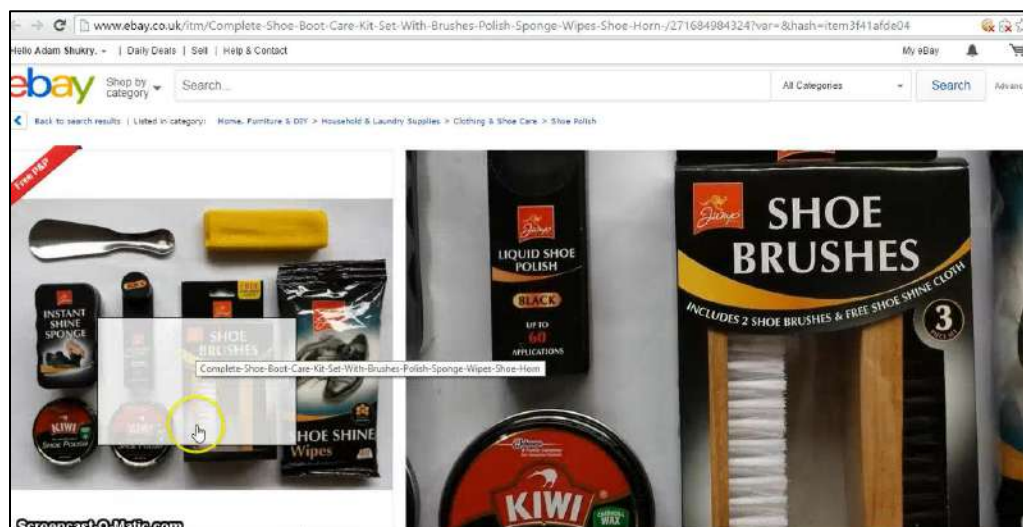
Figure 22 A screenshot on a participant enlarged the product image

10) Code 10 - View Question and Answer Section

The participants were also spotted on stopping their view on the question and answer section in certain product pages. In almost all of the online stores and online market places visited by the participants have the question and answer section. The researcher observed that majority of the participants caught their eyes on the question and answered section because the duration of visit on that particular section is quite long. The average visiting period was one (1) to two (2) minutes. The participants were seen on moving around their cursors to each question and answer while visiting the section.

However, there are certain participants who just parked the cursor around the section's corner while visiting the section. From the researchers' observation too, some of the question and answer section are very brief while some are quite long. The length of the section depends on the products. For electrical appliances for example, the question and answer section is longer which involve five (5) to eight (8) questions with respective answer. While for product such as shoe polish, have a brief question and answer section with about two (2) to three (3) questions. The following screenshot shows an example of question and answer section seen in the online shopping videos from a participant.
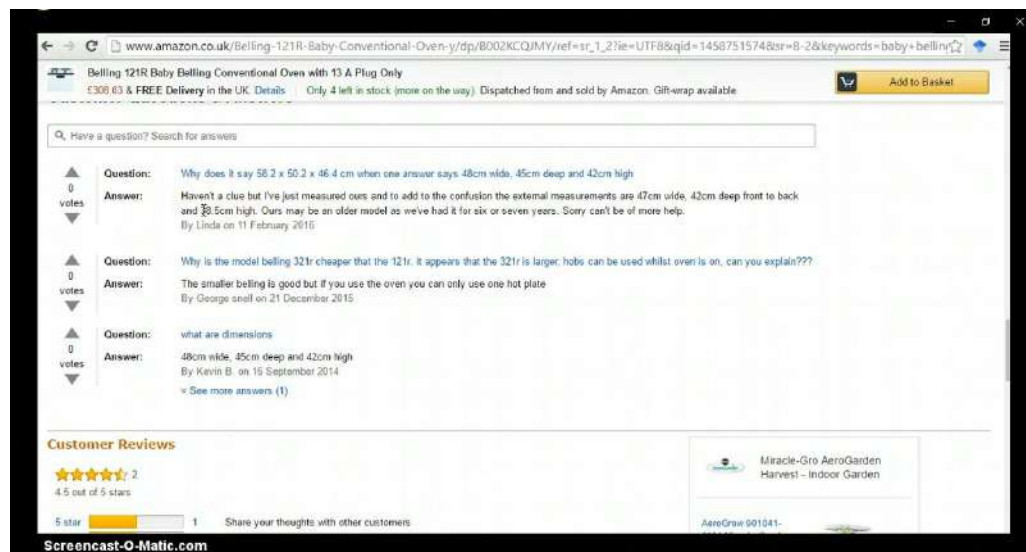
Figure 23 A screenshot on question and answer section

11) Code 11 - View Customer Review Page

During the first round of video observation, the researcher already spotted some videos that show the participants viewed the online customer reviews section. In the second round observation, the process is more detailed where the codes generated to represent the participants' action of viewing the customer reviews section. Since the first round observation already omitted the videos that do not involve the customer reviews, that means the videos left were all involved the participants with online customer reviews.

The participants were seen to select and view customer reviews on two types of products selection; the first choice product page and the second choice product page. The second choice here means product selected from the list of 'Other Recommended Product' option. There are various types of customer reviews spotted in the participants' videos. The system layout is varied according to the brands of online stores and also online market places. However, majority of all the reviews systems have star ratings embedded with the reviews. In some of the online customer review systems, they have another kind of ratings such as features of product (size, comfortability, materials and etcetera), customer feedbacks (ease of use, value for money and etcetera), product performance measures (excellent, poor and etcetera) and more. Besides, there are other features commonly spotted on the customer review page from the videos. For instance, the dropdown menu to filter and sort what types of reviews the participants selected to view. The dropdown menu consisted of a few types of reviews as the following list;

a) Most Relevant
b) Helpfulness – High to Low
c) Date – Newest First
d) Rating – High to Low
e) Rating – Low to High
f) High rated
g) Low rated

Besides, the customer reviews page also shown other details such as the reviewers' details;

a) Name
b) Date of reviews
c) Star Rating

d) Location

e) Gender

f) Age

g) Helpfulness Votes

h) Recommendation Votes

A few participants brought the cursor to the lines of the reviews while viewing it and some were not. The average visiting period for participants viewing customer reviews is between two (2) to three (3) minutes per page. The following screenshot is an example of online customer reviews page.
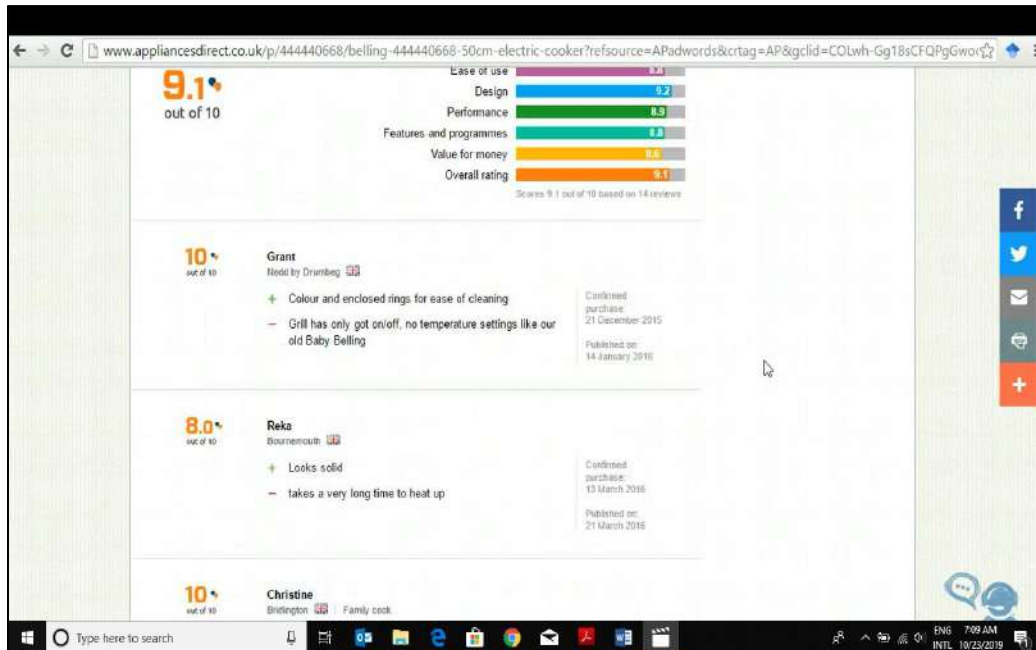
*Figure 24(a) A screenshot on **an** example of customer reviews page*

**12)	Code 12 - Select Next Page of Reviews**

The researcher has observed that the majority of the participants who viewed the online customer review section, eventually viewed more reviews in the next pages. However, some of the participants viewed reviews in the next page once while some of other participants viewed more pages of reviews after the first page. The average visiting period for the following pages of reviews is between one (1) to two (2) minutes each next page. Some of the participants spent more than three (3) minutes while there were others too who spent just a minute or less on the next page reviews. In some videos, it was spotted that the

next page of reviews were not many reviews available but commonly, there are vast of reviews from the first page to the following next pages. Even though all of the participants in this study viewed the online customer review sections, yet there were still a few participants who only viewed the first page of reviews, then stop viewing instead of turning to next page of reviews. They later were viewing another item's first page of reviews. The following is a screenshot of a participant who clicked on the next or another page of reviews.
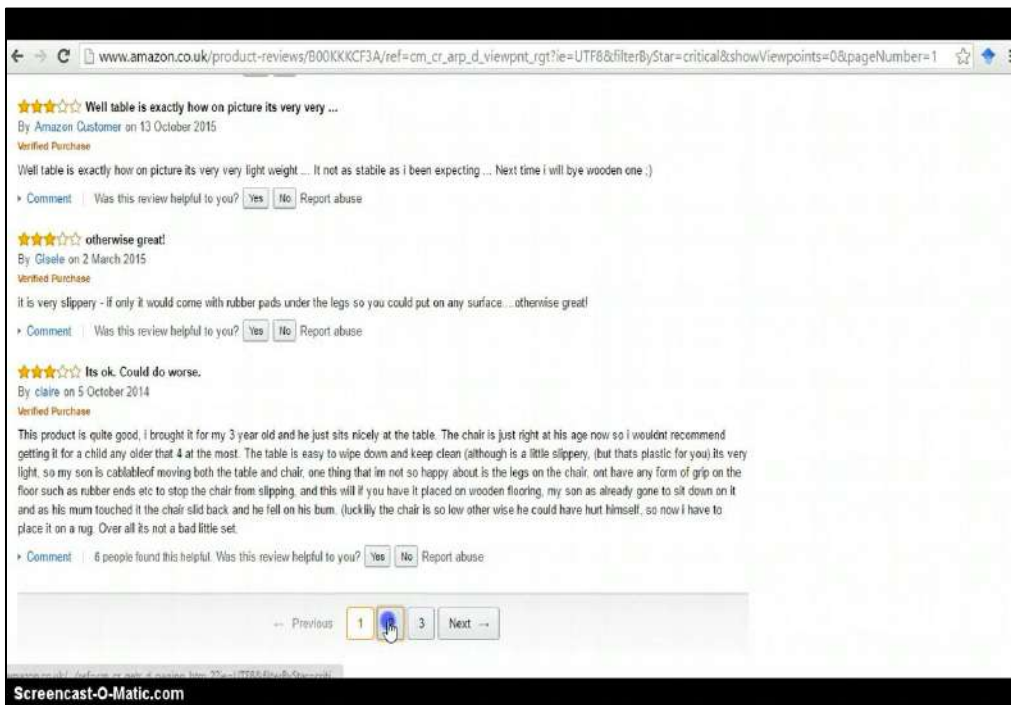
Figure 24(b) A screenshot of a participant who clicked on the next page of reviews.

13)   Code 13 - Select Top Critical Reviews

There were a few different actions noticed while the participants were seen viewing the online customer reviews in their videos. For instance, when some of the participants clicked to select and view critical reviews. The 'Critical Reviews' feature is only available on Amazon's website. Other online customer reviews systems were not spotted having the same feature as this one. In this user study, majority of the participants spotted to have visited Amazon UK for at least once. Based on the researcher's observation, when the participants first viewed the customer reviews page on Amazon, some of them were selected the critical reviews first while there were others too who made the critical reviews

as second or third choice. Based on the videos, the number of critical reviews depends on the products. Some products have a lot of critical reviews indicated by the number of reviews stated under the 'Top Critical Review' title. While in some other products, the critical reviews were not much appeared when the number of reviews stated is low. The following is a figure of a screenshot on a participant who was observed as selected or clicked at the 'Top Critical Reviews'

Figure 25 A screenshot on a participant clicked at the 'Top Critical Reviews'

14)   Code 14 - Select High Rated Review

The researcher also noticed that some of the participants were selecting top-rated reviews first when viewing the product customer reviews section. However, there were also some other participants who did not make it as their first choice, but still chose to view the high rated views after viewing other types of reviews. The high rated views were indicated by the number of stars rated for the reviews posted. Besides, based on the observation, some other high rated reviews also indicated by dropdown menu on the customer review section. The researcher found out that some participants clicked on the dropdown menu and selected 'High Rating' before the high rated reviews appeared in the section. Same as the condition for critical reviews, the number of reviews falls in high rated reviews depends on products. Some products indicate higher number of high rated reviews and some other

products are not. The figure below shows a screenshot of a participant clicked on high rated reviews.

Figure 26 A screenshot of a participant clicked on high rated reviews.

15)   Code 15 - Select Low Rated Review

The researcher also noticed that some of the participants were also selecting low rated reviews. It is either they chose the low rated reviews first or not when viewing the product customer reviews section. The low rated views were indicated by the number of stars rated for the reviews posted same with the high rated reviews. Besides, based on the observation, some other low rated reviews also spotted in the dropdown menu on the customer reviews page. The researcher found out that some participants clicked on the dropdown menu and selected 'Low Rated Review' before the low rated reviews appeared in the section. Same as the condition with high rated reviews, the number of reviews falls in low rated reviews depends on products. Some products indicate higher number of low rated reviews and some other products are not. The figure below shows a screenshot of a participant clicked on low rated reviews.

Figure 27 A screenshot of a participant clicked on low rated reviews.

16)   Code 16 - Search for Reviews

In this process, some participants were spotted to then conducted the search for other reviews too. This means, after the participants viewed the review section in the particular website they were currently viewed, they intended to search for reviews from different sources. When the participants did another search, usually it shows that the participant had more than one source of reviews they were referring to. The search for other reviews was seen resulted in a few sources. Among the types of review sources other than the ones in the online store websites are as following;

a)   Video reviews

b)   Forum reviews

c)   Experts' website reviews

d)   Blogger reviews

Basically, as observed from the videos, the respondents were searching for the other review sources in Google browser. The following is a screenshot of an example of a participant who was looking for other review sources from Google browser.
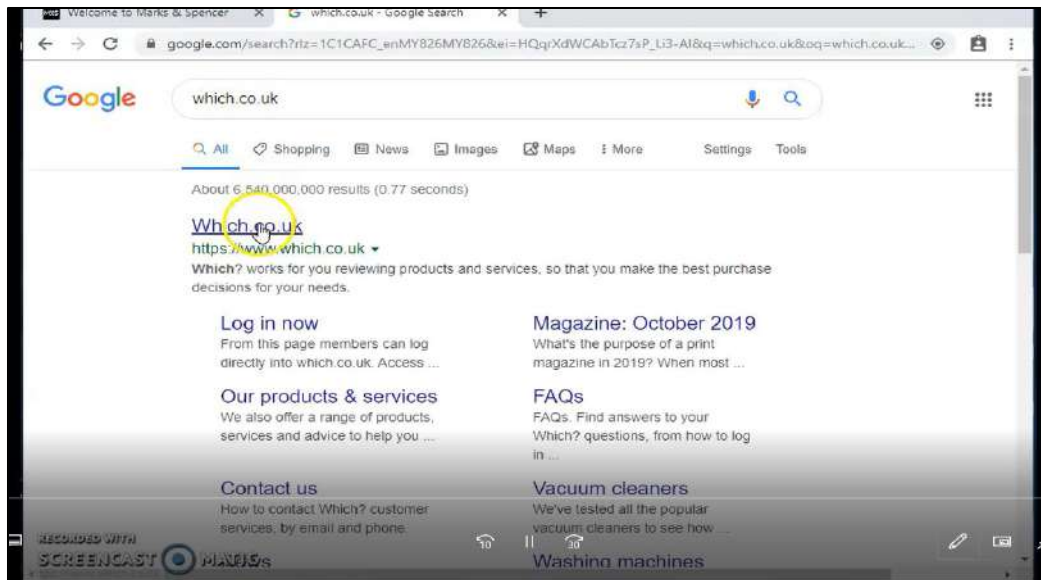
Figure 28 A screenshot of a participant who was looking for other review sources from Google browser.

17)   **Code 17 - View Video Reviews**

There are various types of customer reviews spotted in the participants' videos during the observation process. Other than viewing written reviews, video reviews were also seen involved in participant's online shopping activity. Some of the participants who viewed video reviews typed straight-away on what products of video reviews they wanted to watch. Based on the observation, the researcher found that only YouTube was used as the source for video reviews by some of the participants. The items or products appeared to be in the video reviews are handbags and cosmetic make-up stuff and skincare products. The participants were also noticed to have watched the video reviews from the beginning until the end of the videos. The video reviews average length is between three (3) to five (5) minutes. The cosmetic make-up stuff video reviews seemed to have the longest duration among other video reviews. The following figure shows the screenshot of a participant who was searching for video reviews about handbag from YouTube.

Figure 29 A screenshot of a participant who was searching for video reviews from YouTube.

18)   Code 18 - View Expert Review

Other than video reviews and written reviews from the online store's embedded online customer reviews system, the participants in the videos also seemed to search for reviews from a number of expert reviews websites. There were a few expert reviews websites noticed in the videos such as;

a)   TechAdvisor.co.uk

b)   Which.co.uk

c)   Expertreviews.co.uk

d)   Gadgetsnow.com

e)   Independent.co.uk

The average visiting period of participants on those expert reviews websites is between three (3) to five (5) minutes depending on products. The researcher noticed that technical stuff such as gadgets and electrical appliances recorded the longest period of expert reviews websites' visit period while for non-technical stuff such as backpack did not record longer than two (2) minutes of visiting period on the experts' reviews' website.

The following is an example of a screenshot of a participant visited an expert review's website called TechAdvisor based in the UK.
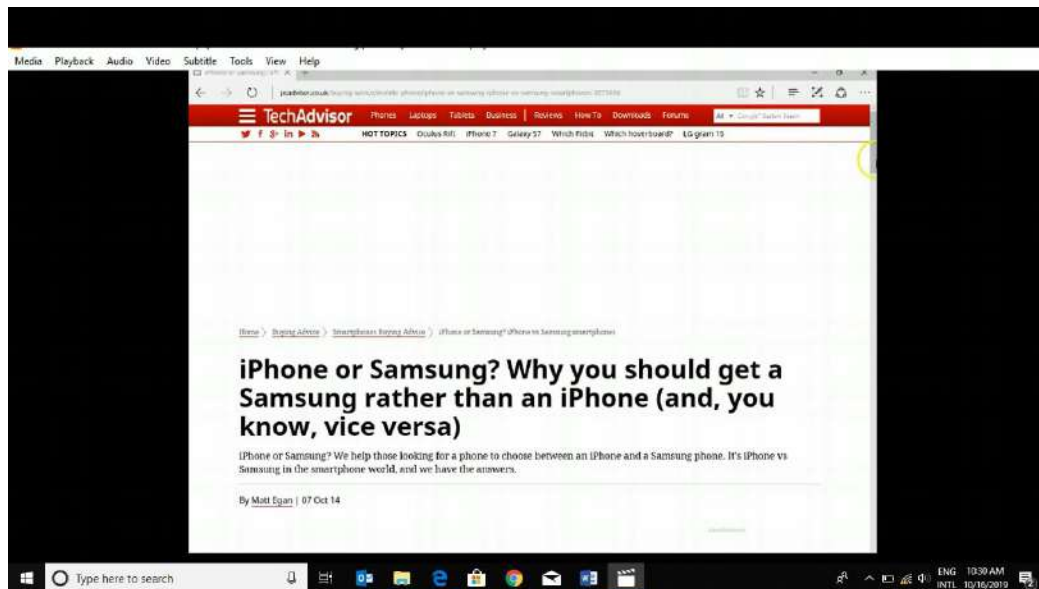
Figure 30 A screenshot of a participant visited an expert review's website

19) Code 19 - View Forum Review

Previously, the study has observed that other than video reviews, written reviews on online customer reviews system and expert reviews websites, there is another source of reviews which is from reviews. the forum reviews were also popular among the participants where the researcher found that the visits to some forum reviews were quite often. Based on the video observation, the researcher noticed there were a few of forum reviews that appeared in the participants' videos such as;

a)   Yahoo Answers

b)   Cari.com forum (Malaysia)

c)   Mesra.net (Malaysia)

d)   eBay Community forum

e)   Google Answers

The average visiting period of participants on those forum reviews is between two (2) to four (4) minutes depending on products. The researcher noticed that the forum reviews were visited by the participants who were viewing for items that are non-technical stuff

such as sunglasses, pocket-knifes and etcetera. The following is a figure that shows a screenshot of a participant who visited Yahoo Answers forum to find more reviews.
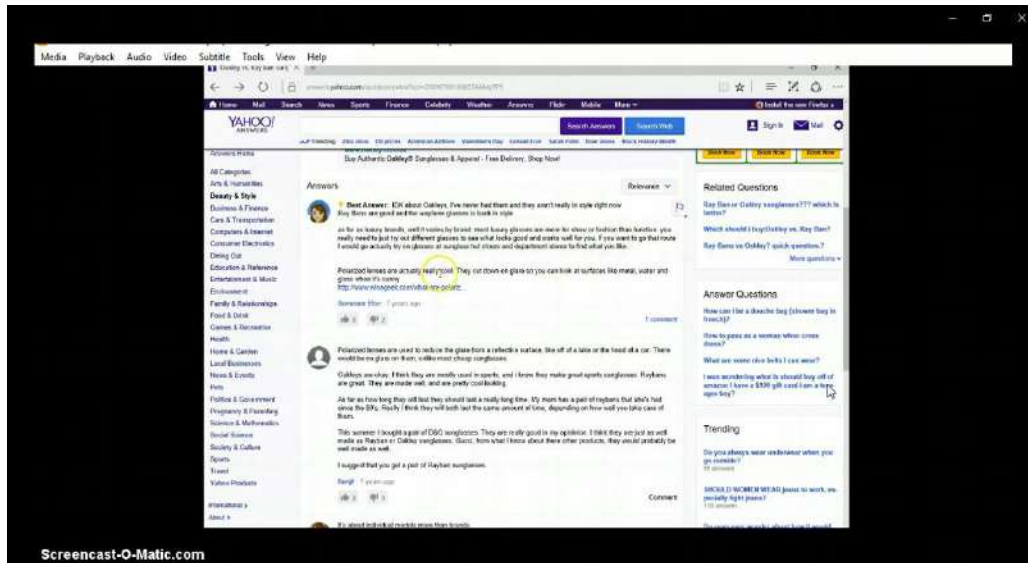
Figure 31 A screenshot of a participant who visited Yahoo Answers forum to find more reviews.

20)   Code 20 - View Seller Profile

There are a few participants were also spotted on viewing the sellers' profile. During this activity, the researcher noticed that the participants who viewed the sellers' profile were visited some online market places such as eBay UK, Amazon UK and Lazada Malaysia where these places provided platforms for various independent sellers and business companies to sell their products. The researcher observed that the few of the participants who viewed sellers profile had repeated the act on most of the items they viewed on the earlier mentioned online marketplaces. The researcher found that the average time of visit on the sellers' history is between one (1) to two (2) minutes. From the sellers' profile, the researcher observed some details included on the sellers 'profile page such as;

1) Seller's name

2) Seller's started date

3) List of an item sold

4) Location

5) Star Rating scores

6) Shops Name

7) Contact details

8) Percentage of positive, negative and neutral feedback

9) Shop's information

10) Feedback Ratings
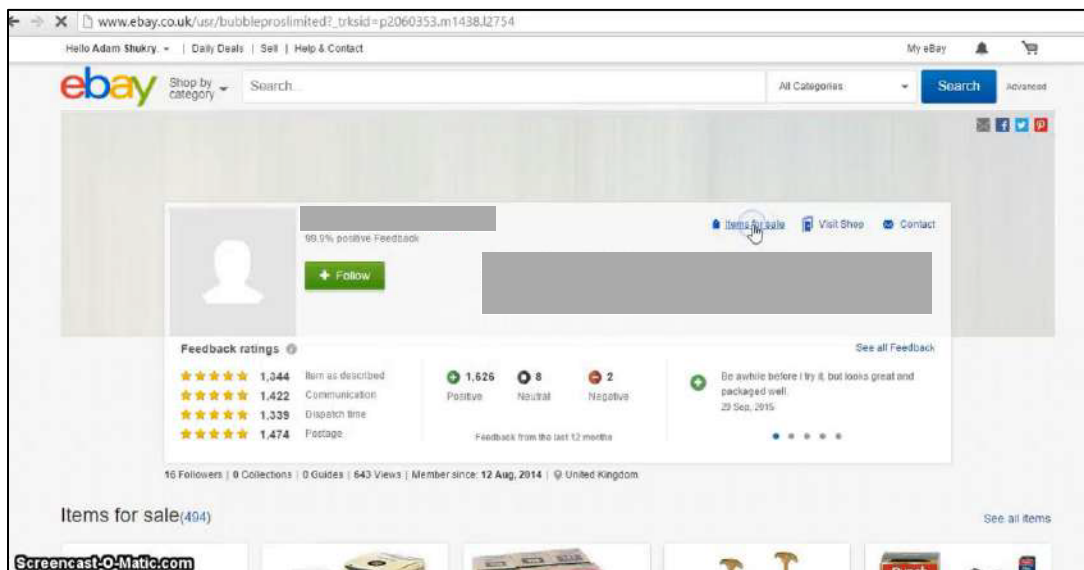
Figure 32 A screenshot participant viewed sellers 'profile page.

21)   Code 21 - View Seller History

From the observation process to, the participants who spotted on viewing the sellers' profile also viewed the sellers' history. The sellers' history displayed information on the sellers' record of sales. The record sales are profiled by the numbers of an item sold and customer feedback regarding the sellers. The customer feedback or reviews were categorised into three types; Positive Feedback, Negative Feedback and Neutral Feedback. These features spotted on eBay UK website. The researcher found that the average time of visit on the sellers' history is between one (1) to two (2) minutes.

The researcher also observed that the few of the participants who viewed sellers' history had repeated the act on most of the other items they viewed. The figure below shows the screenshot of a participant who viewed the Sellers' History section.

From the sellers' profile, the researcher observed some details included such as;

1) Written feedbacks
2) Feedback contributors' name (the buyers)
3) Feedback's posted time and date
4) Feedbacks' category (Positive, Negative or Neutral)
5) Feedback as Seller
6) Feedback as Buyer
7) Feedback left for Others

Content removed on data protection grounds
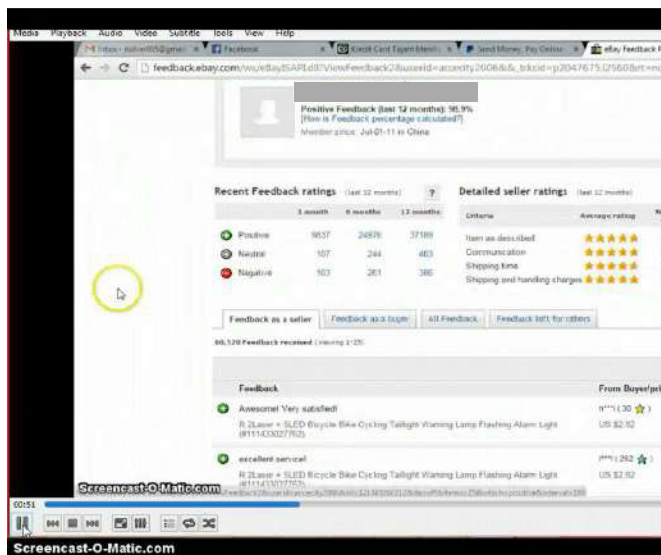
Figure 33 A screenshot of a participant who viewed the Sellers' History section.

22)   Code 22 - Select Other Sellers

This action was spotted by the researcher during the video observation process when the participants selected to open different sellers on other tabs simultaneously. The sellers are all provided with the same searched items. The list of sellers was selected from the product list appeared. This action spotted for participants who have visited eBay UK and Amazon website.

After the participants already viewed one (1) item from one (1) seller, sometimes the participants went back to the Home page where all the list of items and its sellers appeared. From the Home page, the participants seemed to have selected a few other sellers page, opened in other tabs, then visited each one of the seller's page one by one. The acts were done repeatedly when sometimes, the participants viewed the items and the sellers one after another.

23)   Code 23 - View or Select Product Option

During the observation, after the participants already have selected what product they wanted to view, they were on the product page for a while. After a while, the researcher noticed that some of the participants went to the product options drop-down menu to select product options such as its colour, size, types, materials and etcetera. Most of the products appeared on the participants' online shopping videos contained a product that has options such as shoe polish, toddler's table, clothes, electric appliances, shoes, cosmetics and etcetera.

This is another mostly spotted action done by the participants as they seemed to view different colours of the same product, different prices due to different sizes, different types of materials and more. Some of the participants viewed all the products' options while some of them only viewed a few options from the whole list. Some of the products have a long list of product options while some other products have to shortlist of options. From the observation as well, some participants viewed the product options and other information appeared such as 'sold out' and 'not available' situated next to the product

options list. The following figure shows a screenshot of a participant who viewed product options dropdown menu.

Figure 34 A screenshot of a participant who viewed product options dropdown menu.

24)   Code 24 - Select Product from Other Recommended Product Option

During the video observation, some of the participants, while viewing the product they selected from the product list, also have selected product listed from the 'Other Recommended Product' option. Through this option, the participants can view the items related to the product according to the option title stated. The researcher also noticed that some participants just had a quick view while viewing the product from the recommendation list but some other participants viewed approximately just as long as how they viewed the first product, or the first choice of product.

The participants who selected and viewed the products from the recommendation list were observed to have viewed their second options because those products were viewed after their first product selection. Some of the participants instantly clicked on one of the product from the product option. That means, they viewed the recommended options product at the very same page of the first choice product. When they did that, it was observed that the page changed from the first choice product page to the second choice of the product page. While some other participants went back to the previous first choice product page however some participants remained on the second choice product page. Other than that, the

researcher also noticed that some participants viewed more than one choice of products from the recommendation list. They opened those selections in other tabs.

25)   Code 25 - Add Product to Watch List

Some participants were seen to have viewed a few products while browsing online from their videos. The researcher noticed that, some of the participants viewed a different kind of items at a time and also some same kind of items but different brand. However, they were seen to have put some of the items they viewed into the 'Watch List'. After the participants opened the product pages they selected earlier, they were then viewed each of the items on different tabs. After that, they were seen to stay on the product page for a while then clicked on the Watch List button.

Based on the researcher's observation too, some of the participants visited the Watch List page and went to see the whole list of their marked items on the list. The other terms for putting a product into a watch list are; 'Watch this Item' and 'Add to Wish List'. The following is a figure of a participant clicked on the 'Watch List' button appeared on a product page.
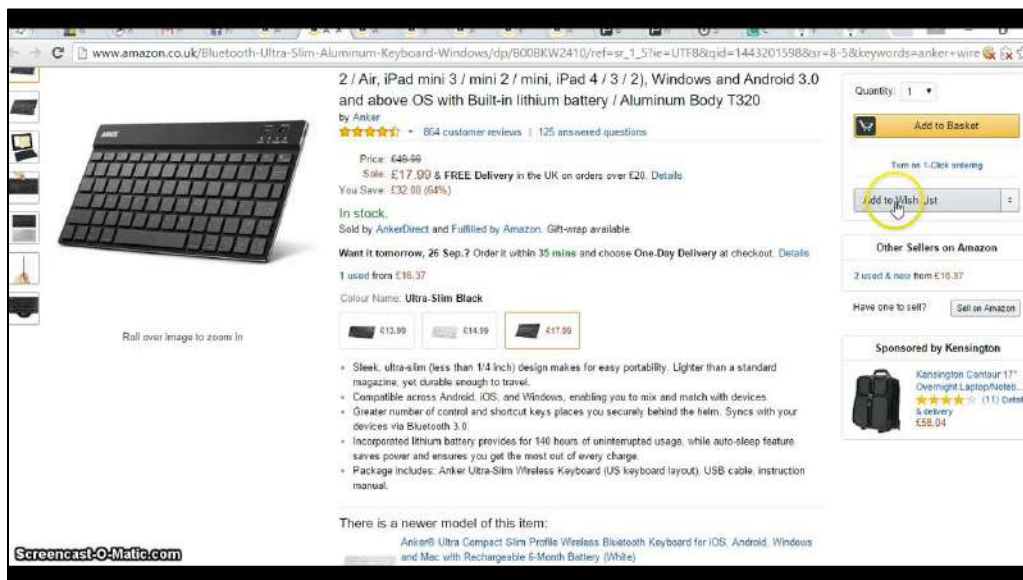
Figure 35 A screenshot of a participant clicked on the 'Watch List' button appeared on a product page.

26)   Code 26 - Add Product to Cart

As this is a user study that intended to observe and understand how online shoppers were conducting online shopping or online purchasing, adding a product to cart is one of the most necessary steps taken and done by the participants. Based on the researcher's observation, the process of putting items or products into cart were done towards the end of the whole online purchasing or shopping video recordings. However, a few participants were also noticed that they did the step in the middle of their video recording duration. There are other terms used from various online store websites and online market places such as;

1) Add to Basket
2) Add to Bag
3) Add to Trolley
4) Add to Shopping Cart

The following is a figure on a screenshot of a participant clicked on a 'Add to Basket' button.

Content removed on data protection grounds
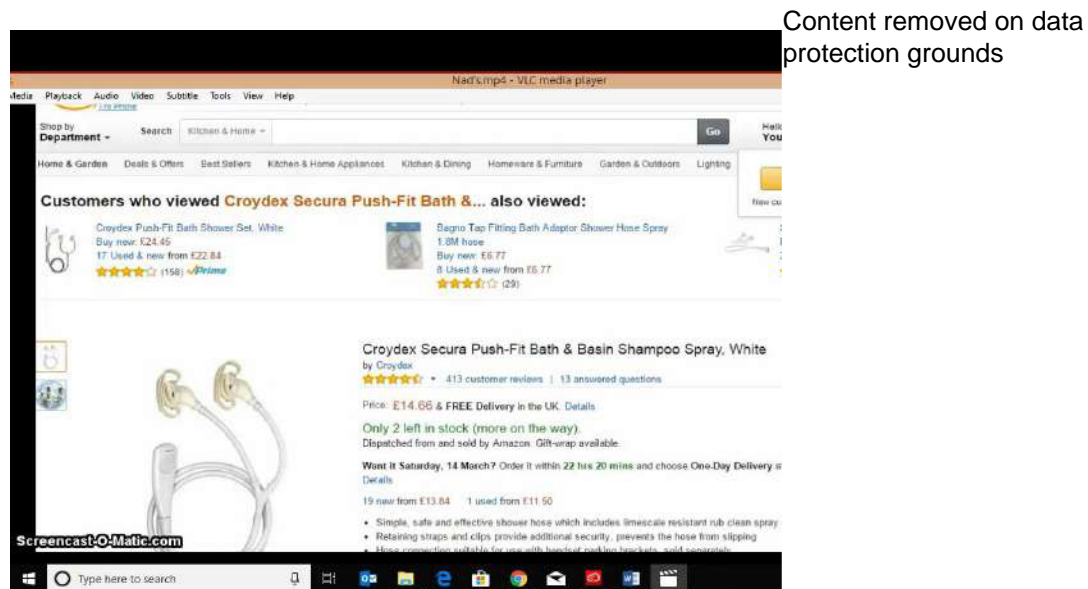
Figure 36 A screenshot of a participant clicked on a 'Add to Basket' button.

27)   Code 27 - Fill Up the Payment Form

The next step was taken by the participants as observed by the researcher, and after they have put their desire to buy items into the cart, is filling up the payment form. Majority of the participants already have their bank account details recorded and saved by certain online store websites. Therefore, during the stage of filling up payment form, the participants were seen to write down a few initial information before the systems or Google called up the remaining details and appeared in the details boxes in the form. The details that were spotted filled by the participants such as;

1) Username
2) Password
3) Types of Card
4) Bank account number
5) Billing Address
6) Options of Payment

The following is a figure that shows a participant was filling up the payment form in an online store's website.

Content removed on data protection grounds
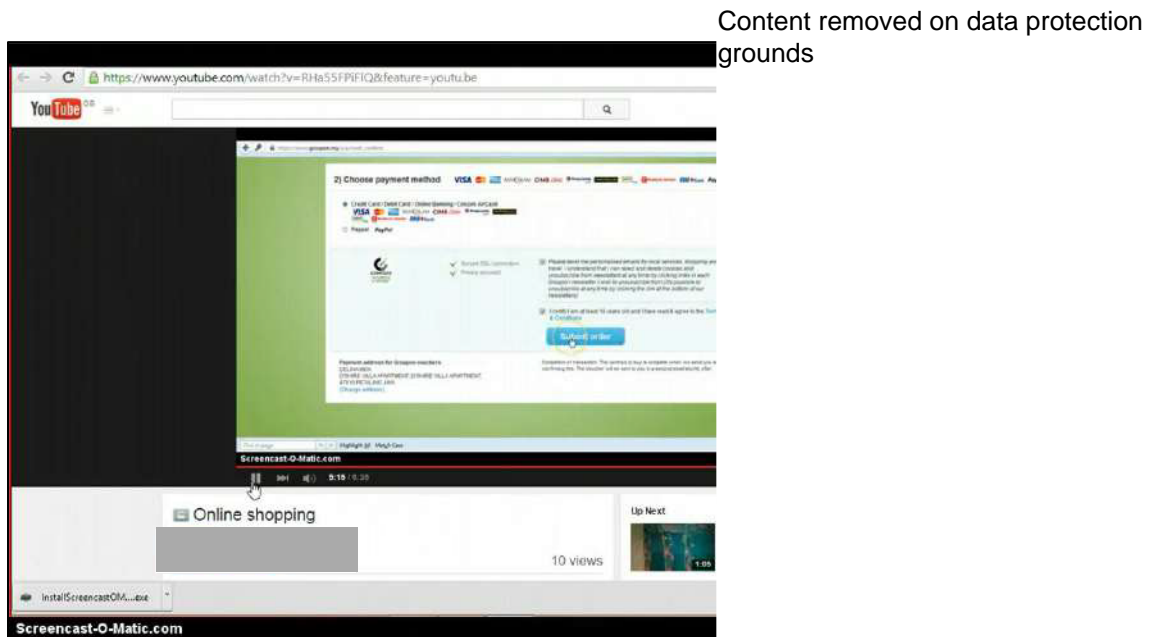
Figure 37 A screenshot on a participant filled up the payment form.

28)   Code 28 - Make Payment

At the end of the online shopping videos, some participants did purchase only one (1) item despite browsing for more than one (1) item and also bought more than one (1) items from the list of the product viewed. After filling up the payment form as observed as the previous action is done, the participants were seen confirming the purchases transactions. During confirming the purchase process, the researcher has spotted that the participants clicked on 'continue' or 'confirm' button on a page that shows the summary of item(s) purchased by the participants. After the participants clicked on the button, another page came up which showed the address of participants and also the summary of purchases as shown earlier. The following is a figure of a screenshot that shows a participant who clicked on the 'Continue' button.

Figure 38 A screenshot on a participant who clicked on the 'Continue' button to make payment..

29)   Code 29 - Review Purchase Details

In the video observation, the researcher could have noticed that after the participants make payment and have confirmed their purchases transaction, another page turned up in the videos which are review purchase details page. In the 'Review Purchase Details' page, the details appeared were as follows;

1) Purchaser's Name

2) Address

3) List of items purchased

4) Billing Address

5) Payment Method

6) Total bill

7) The option of changing address

8) Options of printing receipt

The figure below shows a screenshot example of a participant who was viewing the review purchase details page that includes most of the details listed above.
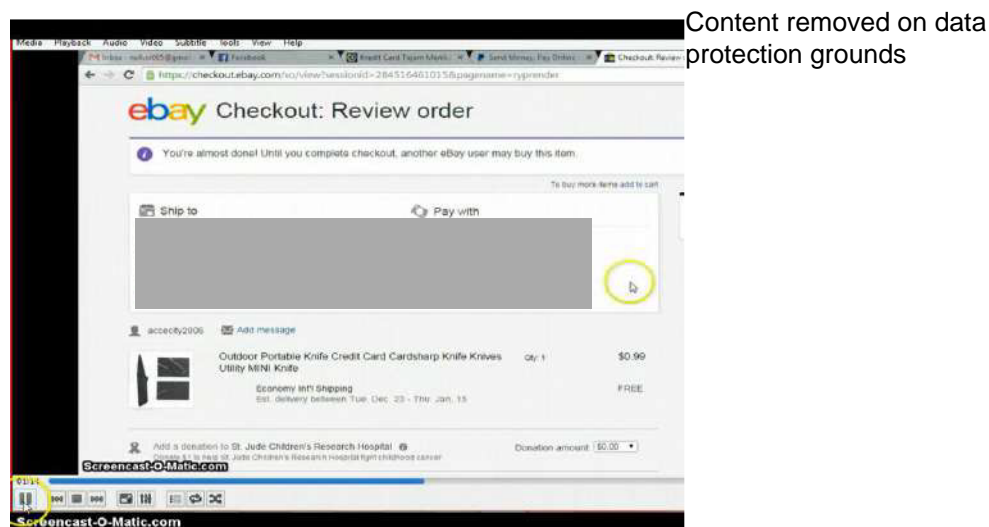
Figure 39A: A screenshot on a participant who reviewed purchase details

5.5.6 Video Observation Analysis for User Study Phase 1

In this section, this study presents the analysis constructed based on the participants' behaviours while engaging in online shopping or purchasing activity, as observed in the User Study Phase 1. The analysis indicates further details to sum up the overall observation of the researcher regarding the thirty-five (35) participants' preferences, tendency and interests shown through their recorded actions.

- Types of products bought

There are two types of products bought by the participants in this study which are the *search for goods* and *experience good*s. According to Klein (1998);

1) Search goods - *"defined as those dominated by product attributes for which full information can be acquired prior to purchase."* while,

2) Experience goods - *"defined as goods are dominated by attributes that cannot be known until the purchase and use of the product or for which information search is costly and more difficult than direct product experience".*
Besides, in simpler definitions for the search goods and experience goods as according to Lu *et al,.* (2014), in their study that;

1) *"Search goods are products that are easy for consumers to evaluate before they buy"* and,

2) *"Experience goods are difficult to evaluate in advance of purchase".*

Based on the observation in User Study Phase 1, the majority of the products involved in their online shopping activity recordings were fell into both categories; search and experience goods. This is because those items represent the examples of goods as according to Huang *et al,.* (2009) study. The examples of goods are as follows;

1) Search goods: shoes, home-furniture, garden implements, electronics, movies, games, automobiles, restaurants and etcetera.
2) Experience goods: automotive parts and accessories, health products, cosmetic and beauty products, camera equipment, medicines, services (haircut, travel, legal) and information-based product such as books.

From the video observation, the products observed as bought by the participants as shown in their videos, and according to the types of goods as described above, are;

1) Search goods;

    a. Shoes and accessories- winter boots, character-inspired slippers for kids, handbag and shoe polish.

    b. Home-furniture – ice packs, pocket knife, gas hob filter papers, wallpapers and tumblers.

    c. Electronics - oven, vacuum cleaner, iron, bottle warmer, heater, wireless keyboard, air-fryer, bottle steriliser, food processor and kindle.

    d. Restaurants – Groupon Malaysia on restaurants; take-away meal vouchers and dine-in meal vouchers.

    e. Games – Nintendo and Xbox games.

    f. Baby stuff – clothing (snowsuit), bottle warmer bag, weaning kit, training cups, toys (Lego) and pushchair rain cover.

2) Experience goods;

    a. Health products – gym supplement, essential oils

    b. Beauty products – skincare products, body scrub, body lotion, cosmetic (make-up face powder)

    c. Books – physic exercise and reference books

    d. Camera equipment – go pro stick

Based on the analysis above, the total number of product bought by the thirty-five (35) participants in User Study Phase 1 are;

- Twenty-nine (29) search goods, and,
- and nine (9) experience goods.

Besides, the analysis of product types bought by the participants in this user study also indicated by their gender. It means, the next analysis result shows that the number of products bought from each product type is based on the participants' gender. From the researcher's observation;

- the female online shoppers bought thirty (30) items, where twenty-three (23) are search goods and seven (7) are experience goods and,

- the male shoppers bought eight (8) items, where six (6) are search goods and two (2) are experience goods.

Since the female online shoppers are the majority group and male online shoppers are the minor group, understandably reported that female online shoppers bought search and experience goods *more than* the male online shoppers in this User Study Phase 1.

- Number of online purchases

Based on the observation, this user study found that there were seven (7) male shoppers and twenty- eight (28) female shoppers. The total number of online purchases as observed in the online shopping videos are thirty-eight (38) items. The number of purchases made by the participants according to their genders is as the following;

- Male shopper reported having eight (8) purchases where one (1) of them made two (2) online purchases.
- Female shopper reported having thirty (30) online purchases where one (1) of them bought three (3) products.

The ratio of online purchases by gender indicated that;

- 1:1.1 for Male shopper which means every single or one (1) male shopper purchased at least 1.1 or 1 product.
- 1: 1.1 for Female shopper which means every single or one (1) female shopper purchased at least 1.1 or 1 product.

Based on the ratio results, both male and female shoppers in User Study Phase 1 reported having the same ratio of online purchases. Given the gap between the number of male participants and female participants is significant, hence the same ratio results.

- Online stores and market places visited

During the observation process, the researcher marked and recorded the name of the online stores and online market places aside from the codes. The list of online stores and market places is available at the section **5.5.5 Summary of Video**

Observation Notes, under the point of **Code 1: Search for Products.** From the input, this study figured out the most and the least visited online stores' website pages. The following details presenting the list of both the most and the least visited shopping sites;

- There are three (3) most visited online stores observed in the videos. The following details show the number of total participants who visited the stores and below is the hyperlink of those online stores or marketplaces and also the products searched for or bought from the sites;

    - The Amazon UK website received a total of twenty-five (25) from the total thirty-five (35) participants visited https://www.amazon.co.uk/ . The products observed as searched for from the Amazon website are;
        1) Oven
        2) Iron
        3) Heater
        4) Toddlers' Table set
        5) Books
        6) Air Fryer
        7) Food Processor
        8) Bottle Warmer
        9) Kindle
        10) Gas Hob Paper
        11) Wireless Keyboard
        12) Maternity Clothes
        13) Bottle Steriliser
        14) Wallpaper
        15) Winter boots
        16) Cosmetic
        17) Toys
        18) Vacuum Cleaner

19) Pocket Knife

20) Push Chair

21) Show Polish

22) Snowsuit

23) Swimsuit

- The eBay UK website received a total of twenty (20) from the total thirty-five (35) participants visited https://www.ebay.co.uk/ . The products observed as searched for from the eBay website are;

  1) Oven
  2) Iron
  3) Heater
  4) Toddlers table
  5) Books
  6) Air Fryer
  7) Food Processor
  8) Bottle Warmer
  9) Kindle
  10) Gas Hob Paper
  11) Wireless keyboard
  12) Shoe Polish
  13) Toys
  14) Swimwear
  15) Pocket Knife
  16) Vacuum Cleaner
  17) Hair Dryer
  18) Training Cups
  19) Tumblers

- The Mothercare UK website received a total of sixteen (16) from the total thirty-five (35) participants visited

https://www.mothercare.com/. The products observed as searched for from the Mothercare websites are;

1) Snowsuit
2) Kid slippers
3) Toddlers table
4) Bottle steriliser
5) Toys
6) Baby accessories
7) Bottle Warmer
8) Maternity clothes
9) Rain cover for pushchair
10) Weaning kit
11) Tumblers
12) Clothes
13) Shoes
14) Training Cups
15) Bottle Warmer

- There are three (3) the least visited online stores as observed in the videos. The following details show the number of total participants who visited the stores and below is the hyperlink of those online stores or marketplaces;

  - The Lazada Malaysia website received a total of five (5) from the total thirty-five (35) participants visited https://www.lazada.com.my/. The products observed as searched for from the Mothercare websites are;
  1) Ice Pack
  2) Makeups
  3) Essential Oil
  4) Go Pro Stick
  5) Gym Supplement

- The Groupon Malaysia website received a total of two (2) from the total thirty-five (35) participants visited https://myfave.com/. The products observed as searched for from the Groupon Malaysia websites are;
  1) Dine-in Meal Vouchers
  2) Take-Away Meal Vouchers

- The Selfridges UK website received a total of one (1) from the total thirty-five (35) participants visited https://www.selfridges.com/GB/en/. The products observed as searched for from the Selfridges websites are;
  1) Handbag

- The Online Customer Reviews pages visited (Most and Least)

During the observation process, the researcher marked and coded when the participants were appeared on visiting customer reviews pages. The coded pages of reviews were then being cross analysed with the products bought by the participants. The analysis below will present the most and the least visited customer reviews pages and what products bought by the participants who were viewing the most and the least online customer pages stated below.

There were varieties in terms of the review systems appeared as visited and seen in the participants' videos. The online customer reviews systems that mostly visited is the reviews system in Amazon UK where it received twenty-five (25) participants' visits. While the least visited online customer review system are many where they received only one or two visits from the participants. However, the screenshot attached is an example of one of the least visited reviews from the Sainsbury's online store.

- The most visited online customer reviews page
  Among the most visited online customer reviews pages are Amazon UK, Mothercare UK and eBay UK. Aligned with the stores being the most popular and most visited by the participants in this user study, therefore it

is logical to regard that the online stores also have recorded the most visits received from the participants on their online customer reviews sections on each product viewed. Based on the observation, examples of product bought by the participants (the ones who made to the checkout phase as observed) are wireless keyboard, kindle, food processor and air fryer.
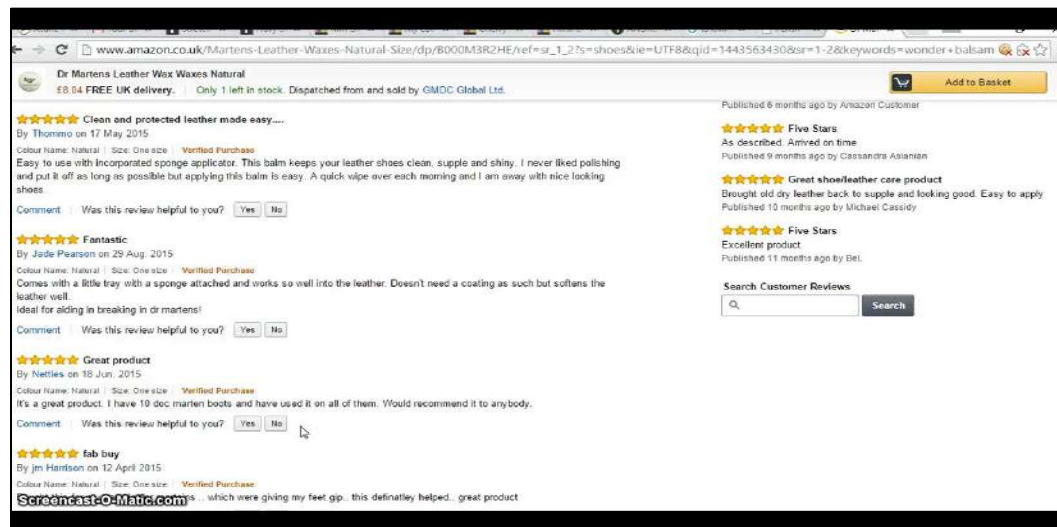
Figure 39B: A Screenshot of online customer reviews on Amazon UK

- The least visited online customer reviews pages

    The least visited online customer reviews pages are many where they received one or two visitors only form the participants of this study. Based on the researcher's observation, some unique product that sold by the particular website or perhaps the least preferred of the 'go-to' web stores by the participants lead to this score. For example, the Sainsbury's store, the observation report noticed more visits on Tesco store and very least visits for the Sainsbury's. However, the participant who visited the web store were still viewed the online customer reviews section. The examples of online stores that received lest visits from participants are Sainsbury's, Dr Marten's, 365 Games UK and more. The example of products bough from those online stores are PC games, shoe polish and toys from Sainsbury's.
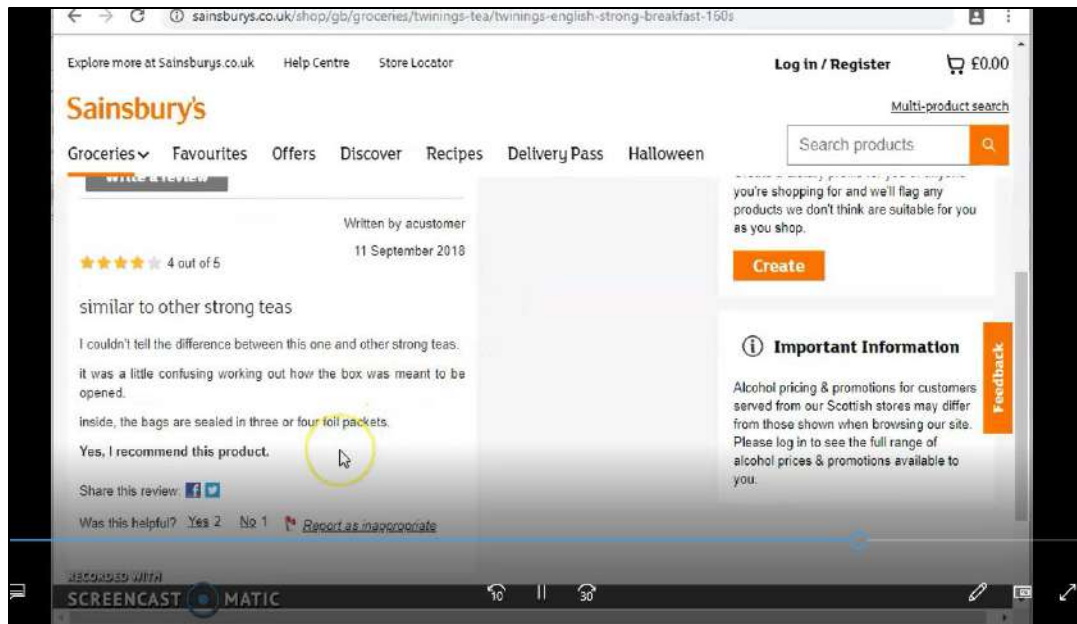
Figure 39C: A Screenshot of Online Customer Reviews on Sainsbury's UK

From the video observation report and the cross analysis of the most and the least viewed online customer reviews pages with types of product bought, this study found out that;

- One of the experience good, which is the physique book has made the buyer (participant) to frequently visit the most visited online customer reviews section, the Amazon UK web store.
- While as for the search goods such as PC games and shoe polish, the participant who bought the product did not frequently visit the online stores that have the least visited online customer reviews; Dr Marten's and 365games UK.

In particular, this little evidence from the cross analysis above supported that experience goods involve greater depth (time per page) and lower breadth (total number of pages) of search than search goods (Lu et al 2014). The differences type of information sought for search and experience goods can precipitate differences in the process through which consumers gather information and make decisions online.

5.5.7 Interview Data Analysis

Based on the observation, there were thirty-five (35) respondents appeared to have used and engaged with the online customer reviews in their online shopping transaction videos. Thus, the thirty-five (35) respondents were selected for the next step, the interview. The following will present the data analysis report based on the interviews conducted with the thirty-five (35) respondents. The data analysis was done using thematic data analysis method. The themes derived from the interviews data gathered from all the thirty-five (35) respondents while performing data coding. The data coding was conducted using Nvivo software; an application that systemised and organised data codes/themes. The following is a screenshot of Nvivo
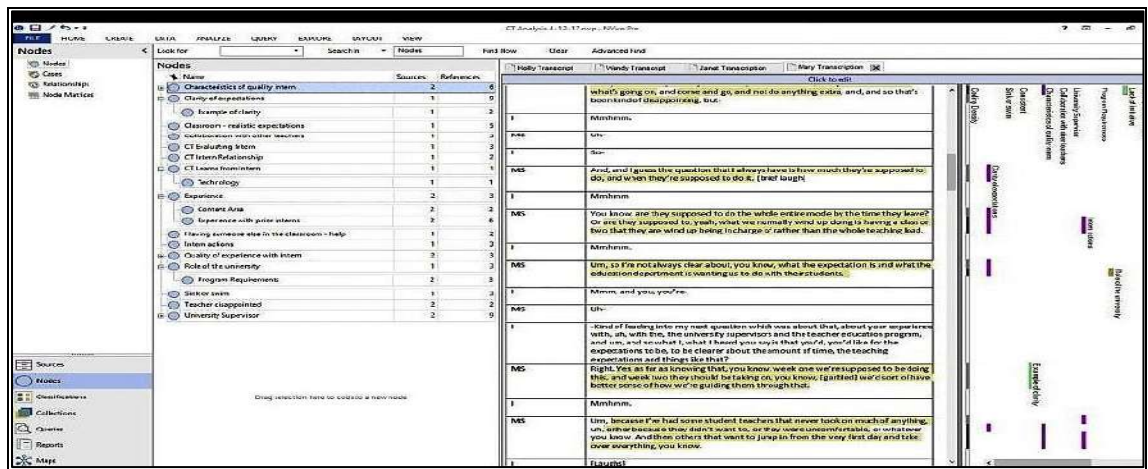
Figure 40 : A Screenshot of Data Analysis Coding with Nvivo Software

This qualitative research employs ethnographically-informed user studies to investigate the question "How can analysing and organising online customer reviews support the online purchasing experience?". The analysis of thirty-five (35) respondents' interview reveal insights that challenge the current state of the role of online customer reviews in the online shopping experience.

There were two (2) themes of interview data analysis findings developed in this Phase 1 Primary Research which are;

a) **Impacts of Customer Reviews**

b) **Information Retrieval from Customer Reviews**

The following will discuss the first theme, **Impact of Customer Reviews.** The result presented three (3) more sub-themes generated during the process of interview data coding and analysis.

The keywords are; **main reference, influence purchasing decision, important to first-timer.**

I.   The online customer reviews as the main reference in online shopping activity.

There were twenty-five (25) respondents who claimed they were using the online customer reviews as their main references in online shopping activity.

"As I am not familiar with the item, so that is why I looked at reviews as my main reference. If I already know what I want to buy, I will skip this step. Then if there is something that got my attention, and I never bought before so yeah, I will go to review. "

(Online shopper 1, User Study 1)

Besides, some participants were claiming that referring to the customer review at the beginning of the online shopping process to know people's experience about using the product;

"Well, because I am not familiar with this product, so I need to read the review to know whether most buyers were happy with using the products. So yeah, I mainly referring that reviews."

(Online shopper 26, User Study 1)

"Hmm… this is the latest product from the Bodyshop, the smoking poppy scrub. I occasionally went through comments from people about this latest product because I never tried that product before, so I wanted to know what people's experience, what do they say about using it."

(Online shopper 13, User Study 1)

It was noticeable too that some respondents were implicating that as long as the item is new and latest, they would refer firstly to the online customer reviews to have more ideas how the product being used by other people.

"First thing first, I went to the customer reviews because I want to know how it works because I don't know how it works. Besides I rely on reviews as I could know more from the customers which brand is stable when you put trampoline outside, you know in Argos there are lots of trampolines from various brands. When you decide which one you want to buy, I will go for which has the most reasonable points based on the customer reviews."

(Online shopper 5, User Study 1)

It is also interesting to know that some respondents even regard online customer reviews as a source of new information about the product. Hence, they would mainly refer to them because it contains new information, new things that are not stated in the product description.

"Yes, I read the customer reviews most of the times when it involves things I am not familiar with. Of course, it was my major reference and source of new information,"

(Online shopper 22, User Study 1)

"When you read the product description, it is not necessarily having enough information regarding product use. Some new product like this one that I'm looking for, which is an Air Fryer which is new in technology, so not many know much about using it. With the customer reviews, for a new product like the air fryer, I can tell this product is really easy to use and very beneficial. Because mostly the reviewers said so, That is why, for a new thing in the market like this, I feel necessary for me to first look into the reviews to get such new information."

(Online shopper 4, User Study 1)

The customer reviews have been the main reference, too, when it comes to technological stuff.

Yes, I was looking at reviews because I don't know much about Xbox so since this is the first time I want to buy so I want to look into advice which can give me more information. I haven't got any clue about what actually people want and expect from it. Maybe it's graphics or the memory stuff, you know I have less clue about that.

(Online shopper 34, User Study 1)

Some of the respondents also made customer reviews as the main reference because they wanted to know about the way to use products.

I'd like to see what people say was it easy to set up the wallpaper, that's what I'm looking at the reviews. Because I haven't done much work or anything to do with wallpaper so since this is my first time so I'd like to see how easy to set it up can it be done by yourself. That is what I was looking at when reading the reviews.

(Online shopper 2, User Study 1)

II.   **The online customer reviews influence the purchasing decision.**

There were some respondents shown that consumer review is a must part of reading as it will influence their decision in the online shopping activity.

"I never use Morphy Richards brand, and previously I had Tefal the one that broken, but when I went through the promo brand, Morphy Richards, based on the reviews all said the iron is nice, works well so yeah I admit it has changed my perception towards that brand. So the reviews I read have influenced my purchasing decision. It is my practice; every time there was a new thing to buy and need to buy them, I must go through the reviews."

(Online shopper 30, User Study 1)

Some of the respondents said the customer reviews influenced them during the decision-making process. That is because the reviews were always convincing hence it is capable of making them decide to purchase the item,

163

"Actually I was looking for winter boots, I never bought winter boots before, and I'm interested in the lambskin boots, but I don't have specific in mind what information to look for I just want to see what people say about lambskin boots. It turned out that users say it was the best boots for winter as it keeps the feet warm, soft and not slipped easily on the slippery surface. Then I bought the lambskin boots finally because the reviews from the users were convincing and then I decided to have one too."

<div align="right">

(Online shopper 19, User Study 1)

</div>

Despite the existing fake reviews or paid reviews, there were still left some genuine reviews by the users. So according to certain respondents, the way the reviews influenced their decision to purchase was from the way they put pictures as the evidence in their reviews.

"I like reading the customer reviews on the Amazon website. There are always pictures posted by the reviewers that help me to really see the product in real life, not as a professional picture on the website. Sometimes the looks are really different from the picture posted. For example, this steamer that I just bought from Amazon, the reason I bought that because the pictures I saw from the review page, and the steamer were actually huge despite the picture displayed was looking small. So the picture somehow made me bought the steamer."

<div align="right">

(Online shopper 20, User Study 1)

</div>

A group of respondents who used customer review to look for extra information on the item they wanted to buy claimed that they found some interesting and useful information that is not available or described in the product description. Yet the interesting information found was eventually influenced their decision making to purchase the products.

"It happened to me in quite a number of incidents when I read reviews. Sometimes, I found a piece of interesting information about a product, for example, this steamed iron. The reason I bought that was that the reviews said this is the only steamed iron that has no control of temperature. It means you can iron on any

material without setting the temperature suitability for the materials. To me, this is interesting yet easy for me who always chase time. So I decided to but the product because of that interesting review."

Some of the respondents were purposely google around for review before deciding to buy. The reviews were necessary to be referred to before making any decision to buy especially expensive products.

"I simply must refer to the customer reviews when the products I wanted to buy are very expensive. As you see in my video, I bought a KMix Kenwood high-performance mixer. The price is way higher than other mixers, but it thrills me to know that making cakes and cookies is easier with them. Same goes to buy a laptop. Which and which is better always better explained well by the previous user. So when I bought a new laptop two months ago, I was referring to the reviews in Amazon and Tesco. Both got thousands of reviews, but I did not real them all. But I admit, I used to refer the reviews because the prices of laptop and mixer are not cheap. It influenced me to think about buying it or not, but finally, I did."

III.   The online customer reviews are important to first-time buyers.

There were thirteen (13) respondents claimed that the item they bought in the videos is their first time buying. Hence, online customer reviews appeared to be useful and need to be referred to before deciding on purchases. The following are some quotes from the first-time mom, dad and or parents who regard the online customer reviews are highly important to them, especially about buying baby products.

"I am a first-time mom, so this is my first time, too, on purchasing milk bottle steriliser. There are three brands here I found in Mothercare. I have no idea which one to buy, so I refer the customer reviews of all the three brands. Later I found out that the Tommee Tippee brand is the simplest and easiest to use based on people's reviews I read. So I decided to but Tommee Tippee Bottle Steriliser."

"Yes, reading customer reviews really depends on what type of product, and it's mostly on the electrical product and baby's product, you know I'm a first-time parent, so of course everything about baby stuff was my first time ever buying it that is why I read reviews."

As first-time parents too, some of the respondents get consulted from the online customer reviews to find some specific information provided by the previous buyers or users based on their own experience.

"Well, this is my first time, so many kinds of information from the experience of other buyers are important for me to know of. For example, I could know about the baby carrier material quality, how different type of baby carrier gives impacts to the parents' body, which design is ergonomics and which not"

According to the participants, before purchasing, online customer reviews were used to compare the product to the brands. Same product but provided from the different brands might as well offer different advantages and disadvantages too.

"I started to look for reviews because we must know what this product reviewed by others, either this is a good product or bad products. From the reviews, it looks like this product, the bottle warmer bag is a very good product, and it can hold the warmth last for three hours. I look for further information about products in reviews because that information I will use to consider when I want to purchase the product. This is my first time buying a bottle warmer bag, so I read reviews and made a comparison with other alternative brands."

Not limited to the first time parents, there were some first time users of other than baby products too among the participant who was highly referring to the online customer reviews. The reason for making the online customer reviews as their main

reference is to get some basic information about people's experience, for example, the quality and performance aspect.

"When I read reviews, ya I simply want to know what other people say about the food processor or of this brand or that brand because I have no idea at all, and this is my first time buying food processor, so I don't have ideas yet what to look for and compare, so that is why I just simply read reviews because I want to know what the previous buyers said about the product, mainly for the quality, value of money because food processor is quite expensive, how is their performance, and all other details"

(Online shopper 21, User Study 1)

IV. The following will discuss first on the second dimension of findings; The Opinions of Finding Information in the Online Customer Reviews. The result presented three (3) themes generated during the process of data coding and analysis.

The keywords are; **satisfied, hard search, depends on products.**

According to a number of participants of this Phase 1 Primary Research, they felt **satisfied** with finding the information that they were looking for from the online customer reviews. Although some of the participants did not have any precedent idea on what information to find in the reviews, they still feel satisfied as whatever the information they found on the customer reviews were enough to influence and convince their intention to pursue buying or purchasing.

"As I was looking for a handy knife set, I wanted to know whether how many blades were included and the size of the handy knives set. In my opinion, finding this kind of information in the reviews was satisfying because there were loads of reviews commenting on the number of blades available on this brand."

(Online shopper 7, User Study 1)

"Yes, reading customer reviews really depends on what type of product, and it's mostly on the electrical product and baby's product, you know I'm a first-time parent, so of course everything about baby stuff was my first time ever

buying it that is why I read reviews. To me, it is easy to find the information we need from the reviews."

<p align="right">*(Online shopper 11, User Study 1)*</p>

This study also presented the users felt it was a hard search for them on finding the desired information in the online customer reviews. There were some reasons found to support the earlier point. The next part is some details from the users about feeling hard to get some specific information on the customer reviews.

"I was looking for a snowsuit for my son and the crucial information that I need to know from the other buyers were the sweater needed to be dry-cleaned or washable because it is not stated in the product description. A little hard to search for the information because I had to go through a number of lengthy reviews before I found out that the suit is not washable and needed to be dry-cleaned only. It is so tiring to go through each review."

<p align="right">*(Online shopper 16, User Study 1)*</p>

"Well, my opinion about finding the extra product information from the reviews is hard sometimes. It will definitely be hard when the product is in the market for a long time, and there were too many reviews, yet it is hard to filter the content points. Usually, they filter other factors only

<p align="right">*(Online shopper 23, User Study 1)*</p>

Lastly is to see the others' opinion about finding the information product from the online customer reviews; It depends on the products. This means as according to the users, some information about products is easy to find while some other products are hard to find too.

"Yes, reading customer reviews really depends on what type of product, and it's mostly on the electrical product and baby's product, you know I'm a first-time parent, so of course everything about baby stuff was my first time ever buying it that is why I read reviews. To me, it is easy to find the information we

<p align="right">168</p>

need from the reviews on baby products because there were a lot of moms out there loves sharing their experiences on the baby stuff.

However, for the product like the rugs, it is always hard to find information about what kind of detergent is suitable for washing the rugs."

(Online shopper 39, User Study 1)

"I went specifically to the reviews about Kindle gadget, and I found some important information such as how long the battery life of the Kindle. Then I was looking for the same information in mini Ipad but none of the reviews I read told about the battery life. So in reviews, it is not always the same for each product, some reviews are detailed and have loads of information while some products do not have much information at all in the reviews. It still depends on the reviews collection of the product itself."

(Online shopper 33, User Study 1)

5.6 Summary of Findings in Primary Research Phase 1

Based on the findings in User Study 1, the study figured out that there was an engagement between the online shoppers (participants) with online customer reviews in their online shopping or purchasing activity. Besides, there were a few factors explained why the participants were referring to the customer reviews. Thus, this study already know that customer reviews really have influence the decision making of the online shoppers and why. But what was missing is, what kind of information that help them during the decision making process in their online purchasing activity. What sort of information that they looked for, used, required or even intended to figure out while browsing around the customer reviews? This kind of missing point will be further investigated in the next phase, Primary Research Phase 2 or User Study 2.

5.7 The Ethnographically- Informed Observation User Study Phase 2: The Online Shopping and Browsing Activity Video Diaries Study

This study received one hundred and fifty (150) real online shopping and browsing videos from thirty (30) respondents. The duration of data collection of this user study is three (3) months. The procedures set were followed while running this user study. All the data (videos) were observed and analysed. After the observation was done, the interview session took place. The interviews were planned not long, around three (3) to five (5) days after each participant sent their videos. The next following sections; the aims and objectives, participants' background, data collection, video observation and analysis, and interview data analysis will explain more about the findings in this User Study Phase 2.

5.7.1 The Aims and Objectives

In User Study 1, it studied the real online shoppers' behaviour while conducting online purchasing, but in this User Study Phase 2, the scope is wider than the User Study 1. This User Study Phase 2 was aimed at looking and understanding further, not only on online shoppers' purchasing activity, but also their online shopping or browsing activity. The study intended to find out if there is an engagement made between the participants (online shoppers) with online customer reviews in their online shopping and browsing activity. If it were, this study intended to further investigate how and why the participants (online shoppers) engage with online customer reviews in their online purchasing and browsing activities. The following are the objectives;

- To study the behaviour of online shoppers (participants) in their online shopping/ purchasing and browsing activity based on their video recordings.
- To find out if there is engagement between the participants and online customer reviews in their online shopping (online transactions or online browsing or both)

- To analyse the role of online customer reviews in the respondents' online purchasing and browsing activity.
- To summarise the findings from the video observation and interviews of the participants (online shoppers) based on their videos.

5.7.2 Data Collection

In User Study 2, the invitation set out were just the same during the User Study Phase 1. The researcher again, did not expose, tell, reveal or implicitly and explicitly indicating that the researcher intended to study customer reviews to the prospect participants. Even though some of a few identified participants selected and invited from the User Study Phase 1, they were not informed the reason being invited again for the next user study; Phase.2. It is important to keep the subject of research unknown to avoid *bias* behaviours and responses. Besides, the reason was to encourage more natural and neutral acts of the prospect online shopper participants while engaging in online shopping and browsing activity. Getting the true or almost true behaviours of online shoppers in Primary Research increase the validity level of responses data and strengthen the analysis outcome.

Some respondents sent their videos right after the invitations received. Some other prospects requested to wait till the payday. That was because they were intended to buy some stuff but still on hold until the payday comes. The researcher finally decided to set three (3) months as the period of receiving the feedbacks (videos). After three (3) months, the researcher finally managed to get thirty (30) participants. Each participant gave five videos (1 week of online shopping activity diary videos). Hence, the total numbers of videos received for the data collection for this study are one hundred and fifty (150) videos.

5.7.3 The Participants' Background

Majority of the respondents who agreed to participate in this user study have successfully met most of the criteria (as acclaimed and verified by the respondents during their interview sessions);

All of the respondents in this study do online shopping on a regular basis. This is because most are busy parents, students and professionals who find limited time to do shopping. Hence, online shopping is the most convenient way to do basic groceries shopping and also leisure shopping such as hunting for clothing, technological stuff, home stuff, healthcare products, beauty products and also accessories.

I. Majority of the participants are regular online shoppers. It means they shop online more than six (6) times a year. The average of online shopping conducts done by all the thirty (30) participants are approximately twenty-four (24) times a year, which means at least twice a month. Some of the participants claimed that they do online shopping five (5) to (6) times a month.

II. Due to actively engaging with online shopping activity, all of the thirty (30) participants who agreed to participate in this study verified that they had the intention to do online shopping and browsing within the estimated time given and agree to record the process for the study purpose.

III. All of the participants were also agreed to be reached by any medium of communications (emails, telephone, social media, mobile applications such as WhatsApp, WeChat and etcetera). Not limited to communications via telco tools and applications, the researcher also communicated with the participants on face to face meeting to discuss and talk further about any query regarding the user study. Some of the participants are the students of the same university where the researcher attended too. Besides, some of the respondents are also the researcher's neighbours.

IV. Upon inviting the potential respondents, who have agreed to participate were aware that they were required to record their online purchasing transactions. Therefore, they were also agreed to give consent on any form of input or feedback given to the study (video recordings and recorded interview). Their consents allowed this study to further process the information or input given to the next phases of this study.

V. Importantly, all of the participants agreed to not taking any chance of violating the study by providing inappropriate content or feedback apart from what expected or requested from the study

The followings are the further details of the respondents' demographic background who participated in the User Study Phase 2 (as acclaimed and verified by the respondents' during their interview sessions);

I. Age and Gender

The participants' aged ranges between twenty (20) to forty 40) years old. Twenty-three (23) of the respondents are female and the rest seven (7) of them are male. The female aged range from twenty (20) to forty (40) years old while the male aged range from twenty-four (24) to thirty-five (35) years old.

II. Ethnicity / Nationality Background

In this User Study phase 2, the participants were less variety in terms of ethnicity background. Majority of the participants are from Malaysia, twenty-seven (27) of them. However, this study managed to get participants from other countries such as one (1) from Singapore, one (1) from Pakistan and two (2) others from Brunei. There was no local, British participant, and other countries participants involved in this study as in previous User Study 1.

III. Status

The participants were mostly foreign university students, homemakers and also professionals of their fields.

IV. Online shopping regularity

Majority of the participants regularly shop online which have online buying records of more than six (6) times a year.

V. Internet and computer literacy

The participants are all IT and internet literate and have basic knowledge of how online shopping being conducted as well as online payment procedures or process.

VI. Memberships

Most of the respondents have a membership with certain product brands such as Boots, Marks and Spencer, Body Shop and online marketplaces such as Amazon, eBay and Lazada.

From the criteria set, the majority of the participants already proof that they fit as the right participants for this study. However, there were a few participants' videos that cannot be used in this study because of the following reasons;

I.   No involvement of product online customer reviews

The study is about how people use online customer reviews on products, therefore, this study rejected videos that do not include or involve the use of product online customer reviews. The use of online customer reviews on service-based websites, would also rejected because it is simply out of the scope of study.

Although the factors above that literally have disqualified a few participants from this study, those factors however, were not known to the participants. The rationale behind the restriction was to control and maintain the neutrality of their online shopping behaviours and actions. This is called controlled-scope of the study. The purpose of having this controlled-scope was to avoid *bias*. Since some of the participants are the acquaintances of the researcher, there is a probability and possibility of bias where the videos produced were based on courtesy to support the researcher's study. It has prevented the actual behaviours of the participants. Therefore, this would create bias when they might not act neutrally and rather make up some actions or behaviours in order to fulfil the main purpose of the study, hence the restriction.

Although the researcher was intended to have more foreign participants in this User Study Phase 2 to further study varieties of consumer behaviours with different background, to no avail. The invitation to participate is open yet the group that responded to the invitation were only the participants from Asia countries.

5.7.4 Video Observation and Analysis

This section presented the report on the outcomes of observation made on online shopping videos sent by the participants in User Study Phase 2. In this second phase of Primary Study; User Study Phase 2, there were thirty-three (33) participants involved with one (1) week diary consisted of five (5) of online shopping videos from each participant. That means, there were one hundred and sixty-five (165) total videos received for the User Study Phase 2.

There are two (2) rounds of observation conducted. The first round observation was meant to identify any evidence of engagement between the participants and online customer reviews in the videos. Any participant who spotted to have engaged with online customer

174

reviews in their online shopping and browsing activities will be selected to continue to the second (2nd) round of observation. In the first round of observation, the videos were played all along till it was finished. No pause, rewind, fast-forward and replay functions were taken place. There were no further details or notes taken too except for remarks by the observer/researcher to indicate which videos will continue to the second observation and which were not.

After the first round of observation was done, there were thirty (30) participants and their videos were selected and continued to be further observed and analysed. However, the other three (3) participants were not selected because there was no evidence of engagement between the participants with online customer reviews spotted in their online shopping videos.

The second round of observation was more thorough, detailed and each video was carefully observed. Most of the movements shown in the videos were coded, added details and notes (memos), and also narratively reported. However, the narrative reports were done on individual video file and document. As for this thesis, the summary of all the individual observation report does not narratively organise and rather on summarised point form.

The video observation process was done using MAXQDA software system. The system merely supports the video analysis process done digitally and more systematic. The software system allowed the researcher to capture the participants' behaviours and actions while conducting online shopping activity via coding system. The coding system is used to describe, characterised and represent the acts of the participants as online shoppers in their video recordings. The **figure** below shows a screenshot of a video observation process using MAXQDA system software and the codes generated. The following video observation report will also be presenting the results of observation on the content of the online shopping videos.

Figure 41: A screenshot of Video Observation process using MAXQDA software.

From the screenshot above, this study evidently shows that it has chosen 'Bottom-Up' Observation Analysis technique to describe the events of online shopping and browsing activity by the real shoppers, in this case, are the participants. Hence, further details will explain more about the video observation process for User Study Phase 2.

5.7.5 Summary of Video Observation Notes

The result of the observation of the video was made according to the codes identified based on what being observed and noticed by the researcher in the online shopping videos. The videos only captured the movement of the participants while conducting online shopping activities with some background sounds (mouse-clicking, fan, participants' cough and other natural sounds). There was no dialogues or conversations recorded because the videos were about individual online shopping activity only. Therefore, basically, only one person involved in each video. The researcher wrote down notes in *memo* form. A memo is used to indicate initial finding where the observer (researcher) found useful and interesting. The memo will also be used as the point for the researcher to recall previously observed

incidents that were similar to what the researcher currently observed. Therefore, memo is also used as the informal codes before the researcher came to name the codes formally.

The following are the further details and description of activities observed reported according to the codes extracted. The codes extracted were named directly reflecting the actions or activities shown and presented in the videos. The reason was to reflect the memo written down on the researcher's codebook or notebook. Besides, by naming the code simplify the actual actions observed about the participants in their videos possibly capable of producing efficient guide for the researcher when it comes to observation report summary writing and individual video observation report writing. The observation report of individual video was done separately and in the Appendix, this study has attached a few samples of individual videos observation report before summarizing all the videos' observation reports here. The codes emerged as reflecting or representing the acts displayed and shown in the videos. The following are the summarised details of observation reported by the codes generated. The reports are fully based on the observation of the researcher and no code was generated out of what being observed from the videos. The following figure shows a screenshot on codes generated list generated during video observation using MAXQDA software package. The codes were all colour coded to differentiate the codes to each other.
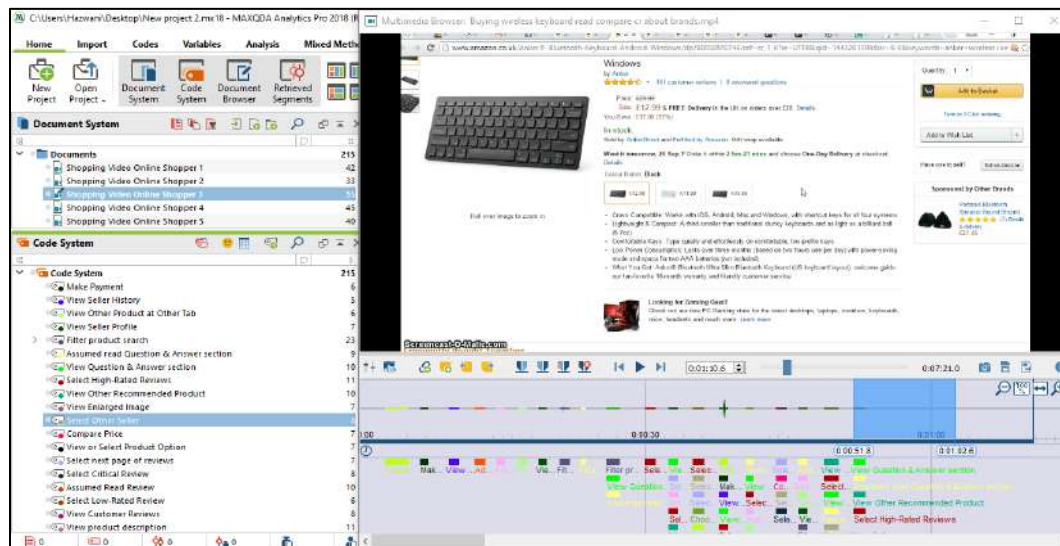
Figure42:A screenshot on codes generated list generated during video observation using MAXQDA software package.

The codes presented the summary of all codes extracted from all the one hundred and fifty (150) videos from thirty (30) participants in this Phase 2 User Study. There are thirty-five (35) codes generated as following;

1) **Multiple stores in one video**
2) **Single store in one video**
3) Search for products
4) Filter product search
5) Search for other products
6) Select and view product
7) View other products in another tab
8) Scroll down the product list
9) View product description
10) View product image
11) View enlarged product image
12) View the question and answer section
13) View customer review page
14) Select the next customer review page
15) A select top critical review
16) Select high rated review
17) Select low rated review
18) Search for review
19) View expert review
20) View video review
21) View forum review
22) **Observed compare reviews**
23) **Observed compare prices**
24) **Observed compare brands**
25) View seller profile
26) View seller history
27) Select other sellers
28) View or select product options
29) Select product from 'other recommended product' option

30)   Logging into websites

31)   Add product to watch list

32)   Add product to cart

33)   Fill up the payment form

34)   Make payment

35)   Review purchase details

All of the thirty-five (35) codes generated above will be explained further and detailed in the following section. Each of the code will be named as 'Code (number) – code name'. Majority of the codes are attached with a figure of screenshots showing the actions represented by the codes. Indeed, in the User Study Phase 2, basically the observation reported mostly the same with the events observed in the User Study Phase 1 despite a few new details added on the descriptions of the codes. The different codes developed in User Study Phase 2 spotted at point number **1, 2, 22, 23,24** and **29**. There were **six (6)** new codes generated in this Phase 2 study. Besides the codes, other differences observed in this User Study Phase 2 are;

a) More online stores website observed visited and reported.
b) More online shopping and browsing detailed actions observed.
c) More details on the use of customer reviews observed.

The codes generated, both old and new codes for this user study will be explained further in the next section; the detailed codes observation descriptions.

1)   Code 1 – Multiple stores in one video

During the observation, the researcher found that the participants not only viewed an online store in one (1) single opened page. Some of the participants were observed to have opened multiple online stores in their one diary video. The researcher observed that for all the different online stores' tabs, some of the respondents viewed the same type of item in different online stores' websites. However, there were also a group of participants who viewed different items in all different online stores' websites opened. The following is a screenshot on an example of one participant who viewed multiple different online stores' websites with different items viewed in each page, Lego toys on Amazon, Anti-Dandruff shampoo in Body Shop and etcetera.

179
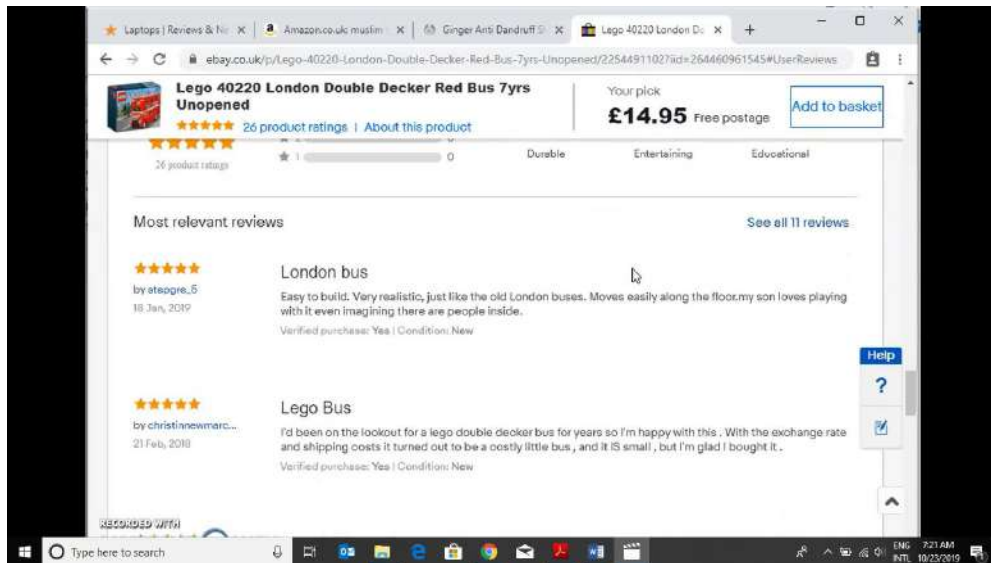
Figure 43:A screenshot of a participant viewed multiple different online stores' websites in one video diary.

2) Code 2 – Single store in one video

From the observation, the researcher also noticed that the participants were only viewed as an online store in one (1) single video diary. Some of the participants were observed to have opened multiple tabs but viewing the same online store in one diary video. The researcher observed that for all the same single online store' tabs opened, some of the respondents viewed the same type of item. Nevertheless, there were also a group of participants who viewed different items in the same single online store's websites opened. The following is a screenshot on an example of one participant who viewed the same one kind of online stores' websites with the same item viewed in each page; a physique book.
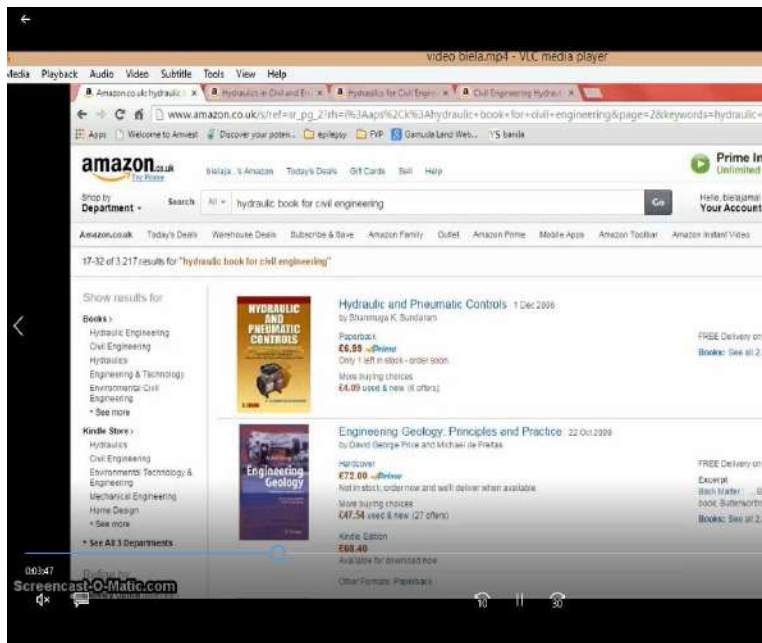
Figure 44: A screenshot of a participant viewed the same online stores' websites in one video diary.

3) Code 3 - Search for Products

In most of the videos, this is the first action recorded by online shoppers (the participants). During this time, the participants were searching for products that they wanted to find. There are two ways doing the product search. Some of the participants searched for products on Google before selecting which store from the result appeared. The Figure below shows an example of a video screenshot of product search on Google browser.
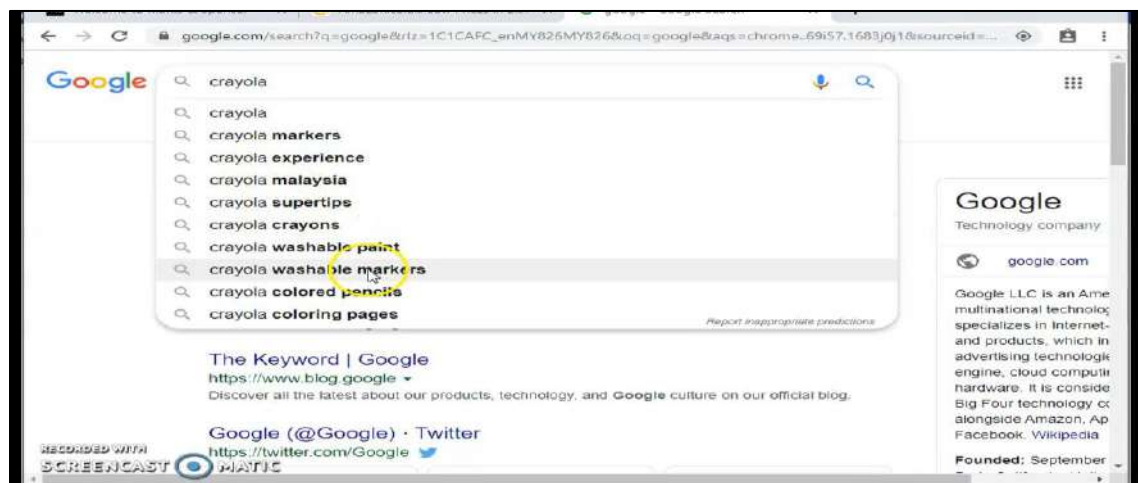
Figure 45: A screenshot of a product search on Google browser.

Another way is, the video recording already started on the specific online store or online market places website such as Sainsbury's and the participants continue on product search step. The figure below shows the screenshot on video that shows participant did product search on a specific online store website; The Sainsbury's.
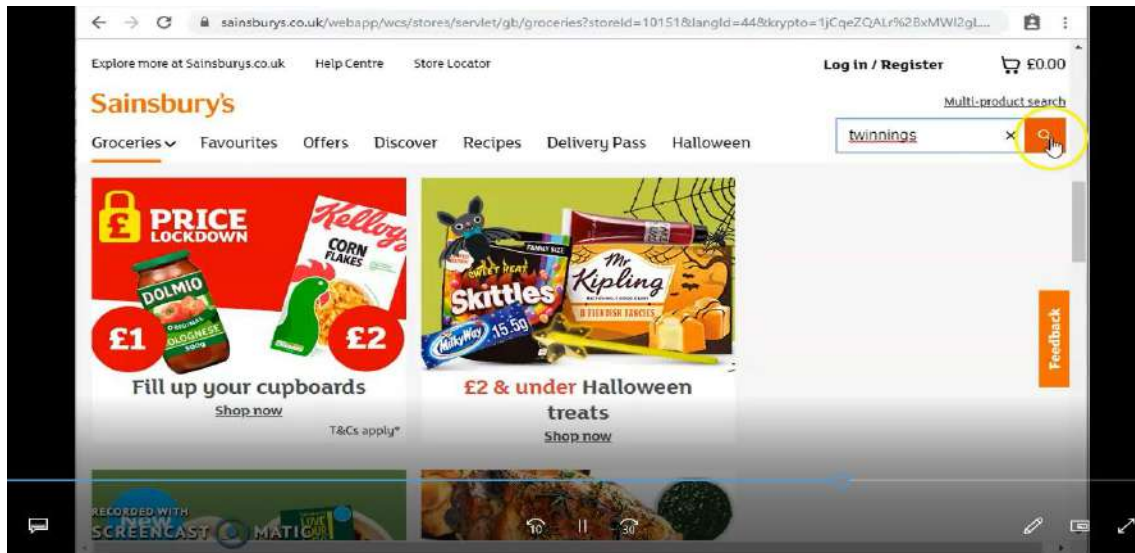
Figure 46: The screenshot of the participant did product search on a specific online store website.

A few of the participants will type the name of products they wanted either by brand or the type of product. However, some of the videos also started by searching on online store first such as Amazon and eBay UK. During the product search process, some of the participants conducted this process once, some did twice and s few too that searched for more than 3 times. Some of the participants were looking for the same item in a few different online stores. Some of the participants looking for the same item or from a few different sellers in one market place such as Amazon UK.

Some of the participants were looking for a different type of products from multiple online stores. In this study, the product search process done by the participants spotted on the following forty (40) online stores as on the list;

1) Amazon UK
2) eBay UK
3) Lazada Malaysia

4) The Body Shop

5) Tesco

6) Mothercare

7) Marks and Spencer

8) Boots

9) Sainsbury's

10) Debenhams

11) Asda

12) Holland and Barret

13) Clinique

14) LW Deals UK

15) Currys

16) Harvey Norman

17) TLC

18) Iceland UK

19) TopMan UK

20) TopShop UK

21) ASOS UK

22) Nike

23) Adidas

24) GEORGE Asda

25) Harrods

26) Crayola

27) The Works UK

28) Clarins Cosmetic

29) Selfridges

30) Toys R Us

31) UGG Boots

32) Dr Martens

33) Argos

34) Fave Malaysia

35) Shashinki.com

36) Blacks UK

37) watchshop.com

38) Lakeland UK

39) Kidsrooms UK

40) Appliancesdirect.com

4)   Code 4 - Filter Product Search

During this process, some of the participants were spotted on doing filter while searching for a product. This was done especially when the participants were already on an online marketplace such as Amazon, eBay UK or online store such as Argos. The filter elements selected by the participants as seen in the videos are such the followings;

1) By Price: Low to High
2) Buy It Now
3) Mostly Recommended
4) By Item Condition
5) By Location
6) By Brand
7) By Product / Product Range
8) By Star Rating
9) By Concern
10) By Sellers

This is the most common and most frequent filter element used by the participants in this user study, Price: Low to High. The figure below shows the screenshot of a product search that used price range from low to high as the chosen product search filter.
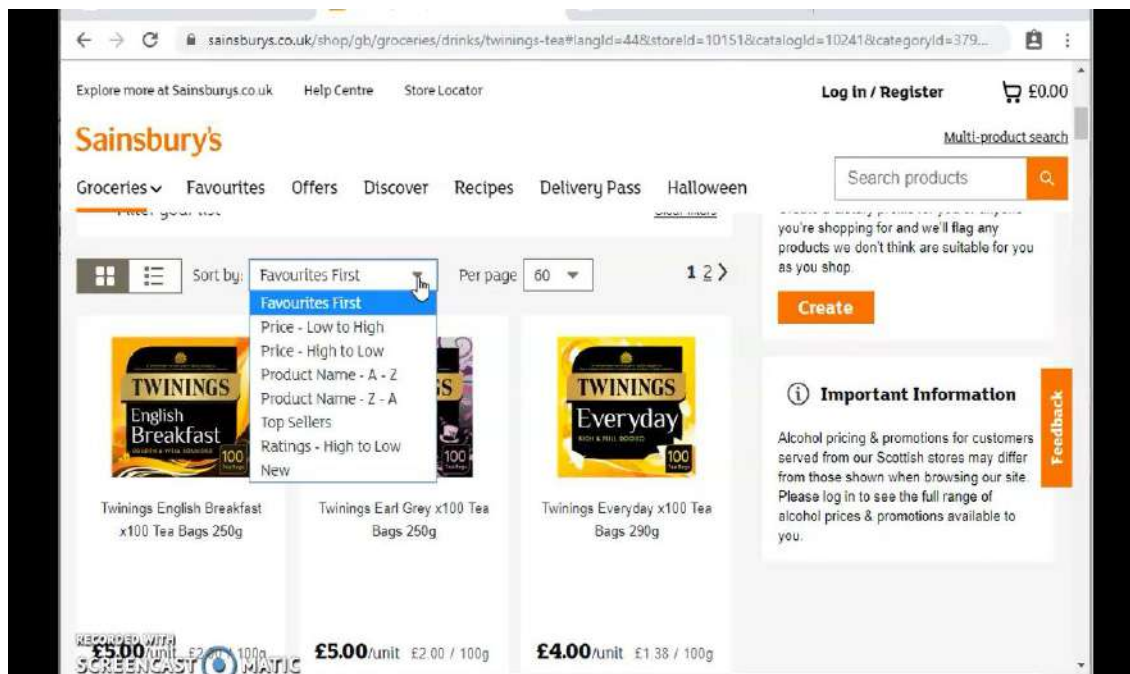
Figure 47: The screenshot of the product search that used price range 'from low to high'.

5)   Code 5 - Search for Other Products

In this process, some participants were spotted to then conducted the search for other product. This means, after the participants viewed some products, they intended to search for a different product. When the participants did another search, usually it shows that the participant had more than one product searched for purchase in the online shopping videos sent. The search for other products was seen done in a few ways. The first one is searching for another product in the same online store. The second one is searching for other product from the same seller. The third one is searching for the other product in the Google browser and other online stores. However, based on the researcher's observation, most of the participants searched for other products on Google Browser to see other products from other stores.

6)   Code 6 - Select and View Product

In all videos, all of the online shoppers or the participants were observed doing selecting and viewing the product that they have chosen. During this activity, none of the participants opened the only tab for one product. There were many tabs opened while the participants viewing the products they wanted to see and/or buy. The participants were observed that

185

sometimes they viewed the product for quite a while, some of them were having a quick view. While viewing the product, some participants were observed to move around their mousses going a little up and down of the product page to see content of the full page. Some participants were seen moving towards the price, description, image and other details on the page. Then, some other participants were also static on the product page for some time before moving or doing the next action or step. The figure below shows a screenshot of an example of a participant who was viewing a product page.

Figure 46: A screenshot of a participant viewed a product page.

7)   Code 7 - View Other Product in Other Tab

The researcher noticed that most of the times, most of the participants as well, after they searched for product, and the results came in a list, the participants will scroll down the list and started to right-click on a few items on the list (same product), to choose the option of 'view product in other tab'. Sometimes, the option was 'view link in another tab'. The figure bellows shows a screenshot of one participant who selected 'view link in another tab' while viewing the items in the item list. Some other participants, who did not search for a specific product earlier, and went to a specific online store home page such as Toys R Us website, instantly went scrolling down the item list on the homepage and did right-

click to a few items that caught the participant's interest. During the right click, the participants chose the 'view item in another tab 'option. The respondents usually viewed the product from one tab then jumped to other tabs then back to the first product tab and repeated the change tabs' view. In most of the videos, the participants show that there were many tabs opened while they were conducting online shopping or purchasing activity.

Content removed on data protection grounds

Figure 47: A screenshot of the participant clicked on 'view product in another tab'.

8) Code 8 - Scroll Down Product List

The participants were seen on scrolling down the product list after they were performing product search activity. There are a few types of layout on the product list. Some products such as in Amazon appear on a basic list type where the product sorted one item on each one single line or lane or space. The basic list type allows the online shopper to scroll all items downward or upward. In some other online store websites, the product list appeared on a grid-style such as in Lazada Malaysia website. This grid sorted a few items in a single line or lane or space. The example of a grid-style item list is as in the figure below. The figure below shows a screenshot of a participant was scrolling down to view the item list in the grid.
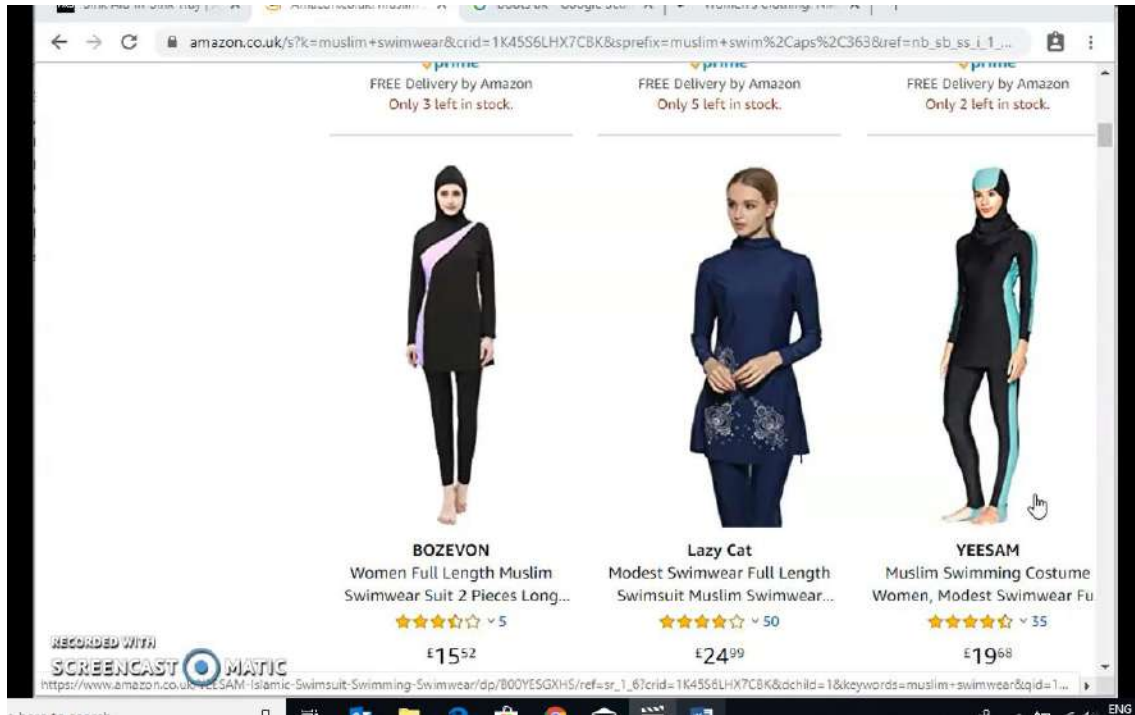
Figure 48: A screenshot of a participant was scrolling the item list in the grid.

9)   Code 9 - View Product Description

Majority of the product page in online store websites or online market places included the product description section. The product description is either situated under the product image, or next to the product image which is usually on the right side of the viewer. Based on the observation, all of the participants viewed the product description while viewing product. There are a few types of product description layout designs.

The product descriptions can be in a detailed format where a paragraph of descriptions placed next to the item. Sometimes, there is a point-form of product description situated in the next product image and the detailed ones were placed under the product image. This layout is commonly found in Amazon and eBay UK sites. Some of the participants will move their cursor while reading the product descriptions and some did not and remain static on the product description section for quite a while.

10) Code 10 - View Product Image

The researcher observed and found out that almost all of the participants will view the product image. The researcher noted that the cursor is moved around the product image or click on the product images to further see the other product images or pictures. However, some of the participants also noted for not viewing the product image but rather went to the product description. Based on the observation, almost all products searched and viewed by the participants, also had the product images viewed too.

11) Code 11 - View Enlarged Product Image

During the observation, the researcher found that the participants not only viewed the product image as in its size that appeared on the website, but also viewed the image in an enlarged mode. Majority of the participants enlarged the image while viewing the product images. However, there were also some of the participants who did not enlarge the product image while viewing the products. The participants were also spotted to move around the product image while enlarging the view to see a close-up of the products. the figure below shows a participant enlarged the product image on the product page.
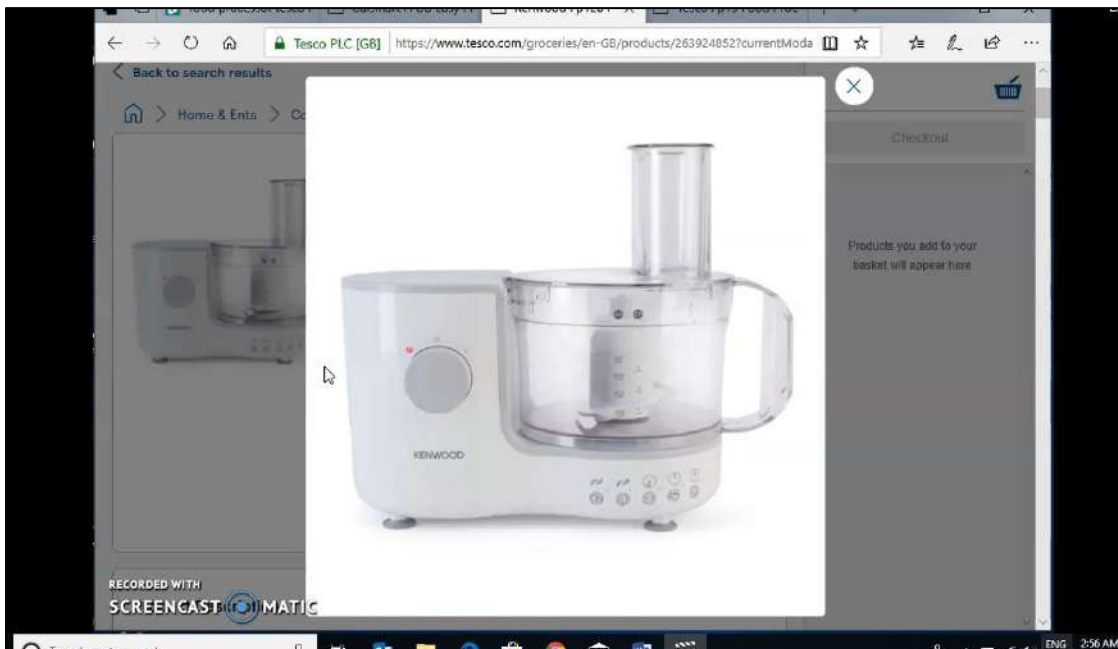
Figure 49: A screenshot of a participant was scrolling the item list in the grid.

12) Code 12 - View Question and Answer Section

The participants were also spotted on stopping their view on the question and answer section in certain product pages. In almost all of the online stores and online market places visited by the participants have the question and answer section. The researcher observed that majority of the participants caught their eyes on the question and answered section because the duration of visit on that particular section is quite long. The average visiting period was one (1) to two (2) minutes. The participants were seen on moving around their cursors to each question and answer while visiting the section. However, there are certain participants who just parked the cursor around the section's corner while visiting the section. From the researchers' observation too, some of the question and answer section are very brief while some are quite long. The length of the section depends on the products. For electrical appliances for example, the question and answer section is longer which involve five (5) to eight (8) questions with respective answer. While for product such as shoe polish, have a brief question and answer section with about two (2) to three (3) questions.

13) Code 13 - View Customer Review Page

During the first round of video observation, the researcher already spotted some videos that show the participants viewed the online customer reviews section. In the second round observation, the process is more detailed where the codes generated to represent the participants' action of viewing the customer reviews section. Since the first round observation already omitted the videos that do not involve the customer reviews, that means the videos left were all involved the participants with online customer reviews. The participants were seen to select and view customer reviews on two types of products selection; the first choice product page and the second choice product page.

h) Most Relevant

i) Helpfulness – High to Low

j) Date – Newest First

k) Rating – High to Low

l) Rating – Low to High

m) High rated

n) Low rated

Besides, the customer reviews page also shown other details such as the reviewers' details;

i)   Name

j)   Date of reviews

k)   Star Rating

l)   Location

m) Gender

n)   Age

o)   Helpfulness Votes

p)   Recommendation Votes

A few participants brought the cursor to the lines of the reviews while viewing it and some were not. The average visiting period for participants viewing customer reviews is two (2) to three (3) minutes per page. The following screenshot is an example of online customer reviews page.
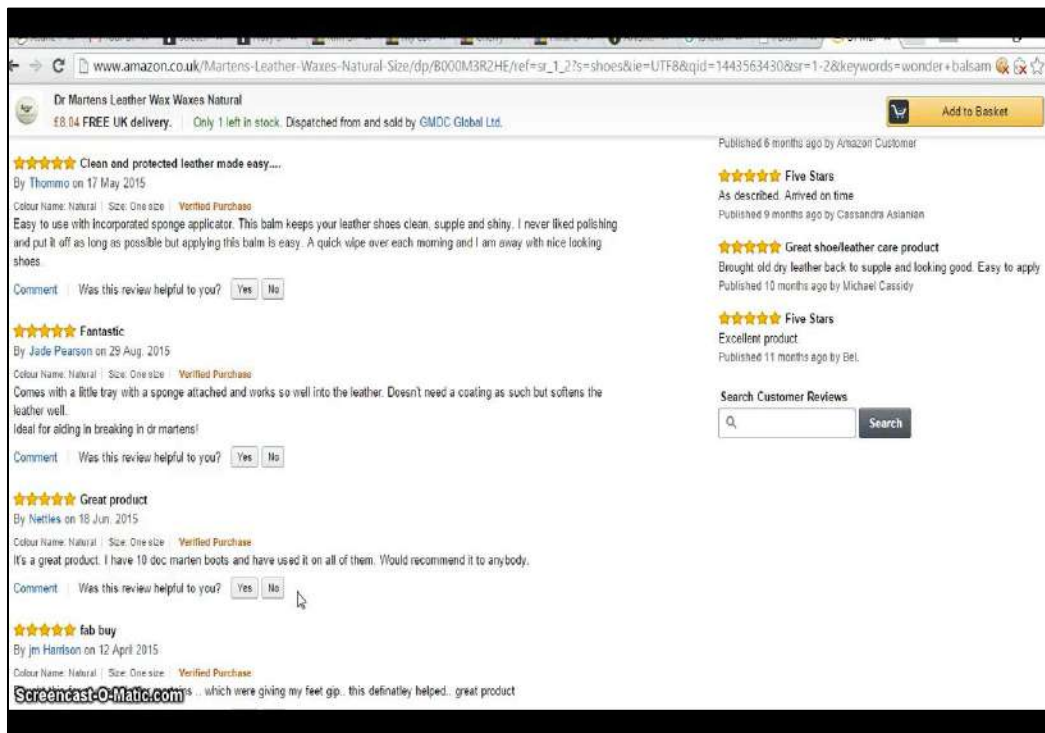
Figure 50: A screenshot on the example of online customer reviews page.

14)   Code 14 - Select Next Page of Reviews

The researcher has observed that the majority of the participants who viewed the online customer review section, eventually viewed more reviews in the next pages. However, some of the participants viewed reviews in the next page once while some of other participants viewed more pages of reviews after the first page. The average visiting period for the following pages of reviews is between one (1) to two (2) minutes each next page. Some of the participants spent more than three (3) minutes while there were others too who spent just a minute or less on the next page reviews. In some videos, it was spotted that the next page of reviews were not many reviews available but commonly, there are vast of reviews from the first page to the following next pages. Even though all of the participants in this study viewed the online customer review sections, yet there were still a few participants who only viewed the first page of reviews, then stop viewing instead of turning to next page of reviews. They later were viewing another item's first page of reviews.

15)   Code 15 - Select Top Critical Reviews

There were a few different actions noticed while the participants were seen viewing the online customer reviews in their videos. For instance, when some of the participants clicked to select and view critical reviews. The 'Critical Reviews' feature is only available on Amazon's website. Other online customer reviews systems were not spotted having the same feature as this one. In this user study, majority of the participants spotted to have visited Amazon UK for at least once. Based on the researcher's observation, when the participants first viewed the customer reviews page on Amazon, some of them were selected the critical reviews first while there were others too who made the critical reviews as second or third choice. Based on the videos, the number of critical reviews depends on the products. Some products have a lot of critical reviews indicated by the number of reviews stated under the 'Top Critical Review' title. While in some other products, the critical reviews were not much appeared when the number of reviews stated is low. The following is a figure of a screenshot on a participant who was observed as selected or clicked at the 'Top Critical Reviews'

Figure 51: A screenshot on a participant clicked at the 'Top Critical Reviews'

16)   Code 16 - Select High Rated Review

The researcher also noticed that some of the participants were selecting top-rated reviews first when viewing the product customer reviews section. However, there were also some other participants who did not make it as their first choice, but still chose to view the high rated views after viewing other types of reviews. The high rated views were indicated by the number of stars rated for the reviews posted. Besides, based on the observation, some other high rated reviews also indicated by dropdown menu on the customer review section. The researcher found out that some participants clicked on the dropdown menu and selected 'High Rating' before the high rated reviews appeared in the section.

Same as the condition for critical reviews, the number of reviews falls in high rated reviews depends on products. Some products indicate higher number of high rated reviews and some other products are not. The figure below shows a screenshot of a participant clicked on high rated reviews.

Figure 52: A screenshot on a participant clicked on high rated reviews.

17) Code 17 - Select Low Rated Review

The researcher also noticed that some of the participants were also selecting low rated reviews. It is either they chose the low rated reviews first or not when viewing the product customer reviews section. The low rated views were indicated by the number of stars rated for the reviews posted same with the high rated reviews. Besides, based on the observation, some other low rated reviews also spotted in the dropdown menu on the customer reviews page. The researcher found out that some participants clicked on the dropdown menu and selected 'Low Rated Review' before the low rated reviews appeared in the section. Same as the condition with high rated reviews, the number of reviews falls in low rated reviews depends on products. Some products indicate higher number of low rated reviews and some other products are not. The figure below shows a screenshot of a participant clicked on low rated reviews.

Figure 53: A screenshot on participant clicked on low rated reviews.

18)   Code 18 - Search for Reviews

In this process, some participants were spotted to then conducted the search for other reviews too. This means, after the participants viewed the review section in the particular website they were currently viewed, they intended to search for reviews from different sources. When the participants did another search, usually it shows that the participant had more than one source of reviews they were referring to. The search for other reviews was seen resulted in a few sources. Among the types of review sources other than the ones in the online store websites are as following;

1. Techadvisor
2. The Independent
3. Psyche uk
4. The expert reviews

Basically, as observed from the videos, the respondents were searching for the other review sources in Google browser. The following is a screenshot of an example of a participant who was looking for other review sources from Google browser.
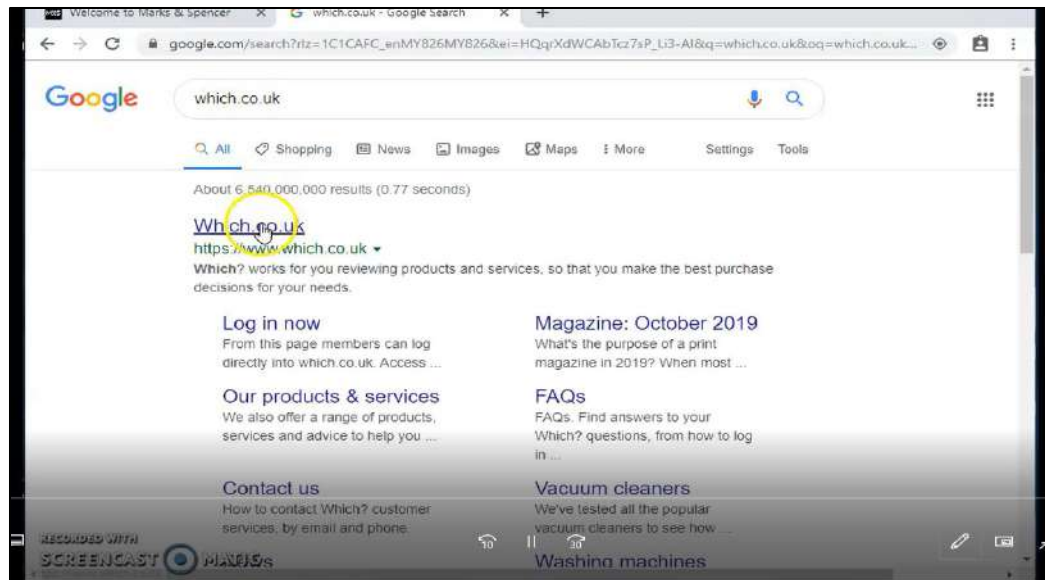
Figure 54A screenshot of a participant who was looking for other review sources from Google browser.

19)   Code 19 - View Video Reviews

There are various types of customer reviews spotted in the participants' videos during the observation process. Other than viewing written reviews, video reviews were also seen involved in participant's online shopping activity. Some of the participants who viewed video reviews typed straight-away on what products of video reviews they wanted to watch. Based on the observation, the researcher found that only YouTube was used as the source for video reviews by some of the participants. The items or products appeared to be in the video reviews are handbags and cosmetic make-up stuff and skincare products. The participants were also noticed to have watched the video reviews from the beginning until the end of the videos. The video reviews average length is between three (3) to five (5) minutes. The cosmetic make-up stuff video reviews seemed to have the longest duration among other video reviews. The following figure shows the screenshot of a participant who was searching for video reviews about handbag from YouTube

Figure 55: A screenshot of a participant who was searching for video reviews from YouTube.

20)   Code 20 - View Expert Review

Other than video reviews and written reviews from the online store's embedded online customer reviews system, the participants in the videos also seemed to search for reviews from a number of expert reviews websites. There were a few expert reviews websites noticed in the videos such as;

1. Techadvisor
2. The Independent
3. Psyche uk
4. The expert reviews

The average visiting period of participants on those expert reviews websites is between three (3) to five (5) minutes depending on products. The researcher noticed that technical stuff such as gadgets and electrical appliances recorded the longest period of expert reviews websites' visit period while for non-technical stuff such as backpack did not record longer than two (2) minutes of visiting period on the experts' reviews' website.

The following is an example of a screenshot of a participant visited an expert review's website called Independent based in the UK.
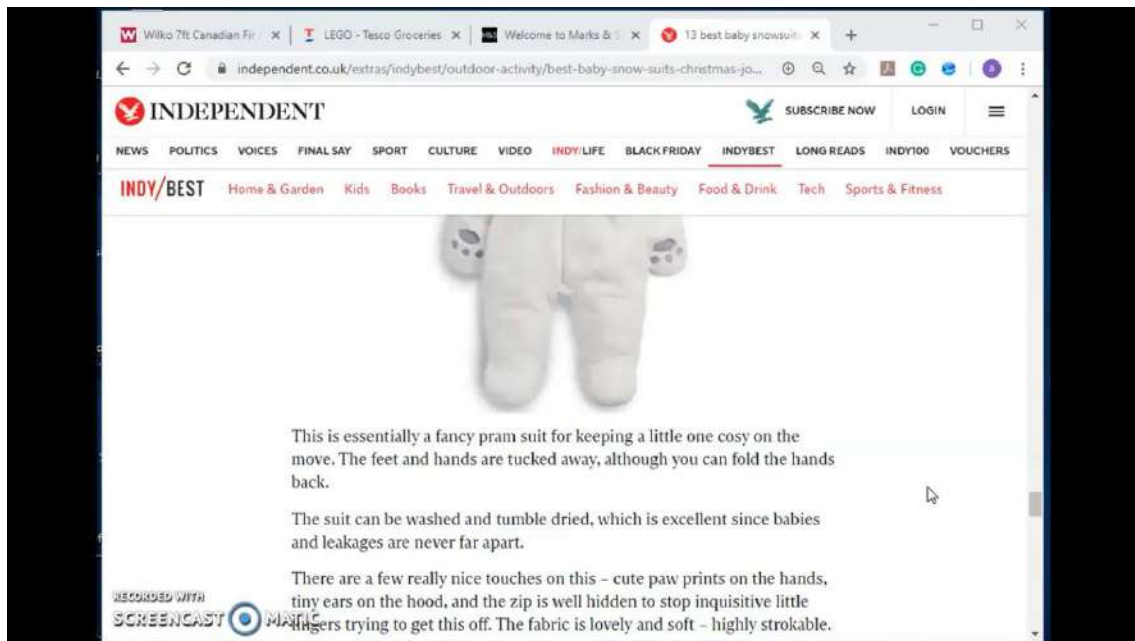
Figure 56: A screenshot of a participant visited an expert review's website

21)   Code 21 - View Forum Review

Previously, the study has observed that other than video reviews, written reviews on online customer reviews system and expert reviews websites, there is another source of reviews which is from reviews. the forum reviews were also popular among the participants where the researcher found that the visits to some forum reviews were quite often. Based on the video observation, the researcher noticed there were a few of forum reviews that appeared in the participants' videos such as;

1. Cari.net
2. Amazon community forum
3. EBay UK Forum

The average visiting period of participants on those forum reviews is between two (2) to four (4) minutes depending on products. The researcher noticed that the forum reviews were visited by the participants who were viewing for items that are non-technical stuff

such as sunglasses, pocket-knifes and etcetera. The following is a figure that shows a screenshot of a participant who visited Yahoo Answers forum to find more reviews.
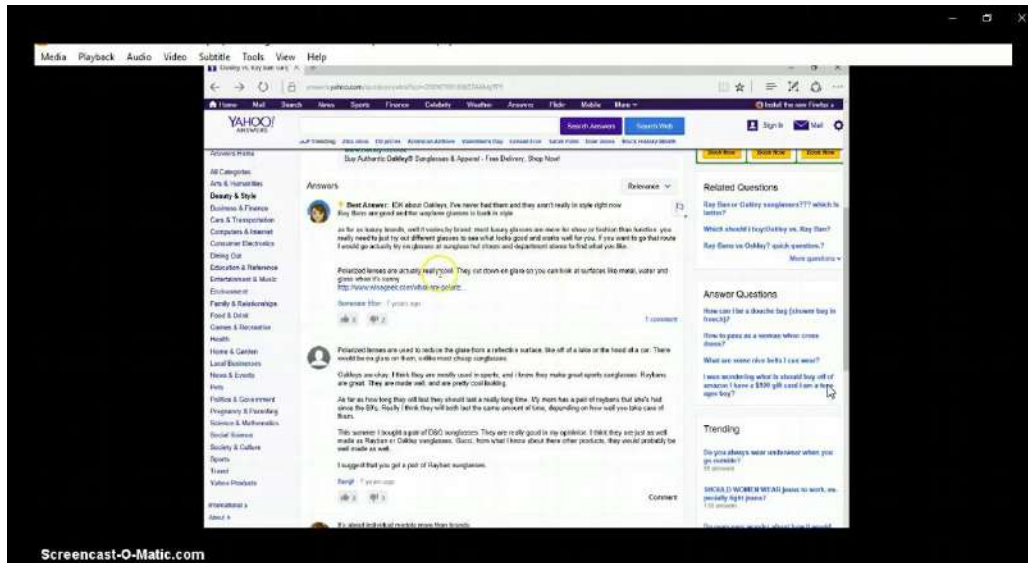
Figure 57: A screenshot of a participant who visited Yahoo Answers forum to find more reviews.

22)   Code 22 - View Seller Profile

There are a few participants were also spotted on viewing the sellers' profile. During this activity, the researcher noticed that the participants who viewed the sellers' profile were visited some online market places such as eBay UK, Amazon UK and Lazada Malaysia where these places provided platforms for various independent sellers and business companies to sell their products. The researcher observed that the few of the participants who viewed sellers profile had repeated the act on most of the items they viewed on the earlier mentioned online marketplaces. The researcher found that the average time of visit on the sellers' history is between one (1) to two (2) minutes.

Figure 58:A screenshot participant viewed sellers 'profile page.

23)   Code 23 - View Seller History

From the observation process to, the participants who spotted on viewing the sellers' profile also viewed the sellers' history. The sellers' history displayed information on the sellers' record of sales. The record sales are profiled by the numbers of item sold and customer feedback regarding the sellers. The customer feedback or reviews were categorised into three types; Positive Feedback, Negative Feedback and Neutral Feedback. These features spotted on eBay UK website. The researcher found that the average time of visit on the sellers' history is between one (1) to two (2) minutes. The researcher also observed that the few of the participants who viewed sellers' history had repeated the act on most of other items they viewed.

24)   Code 24 - Select Other Sellers

This action was spotted by the researcher during the video observation process when the participants selected to open different sellers on other tabs simultaneously. The sellers are all provided with the same searched items. The list of sellers was selected from the product list appeared. This action spotted for participants who have visited eBay UK and Amazon

website. After the participants already viewed one (1) item from one (1) seller, sometimes the participants went back to the Home page where all the list of items and its sellers appeared. From the Home page, the participants seemed to have selected a few other sellers page, opened in other tabs, then visited each one of the seller's page one by one. The acts were done repeatedly when sometimes, the participants viewed the items and the sellers one after another.

25) Code 25 – Assumed Compare Prices

This action was spotted by the researcher during the video observation process when the participants selected to open different sellers on other tabs simultaneously. Or also different online stores' websites at one time. However, based on the researcher's remark, some of the participants were going back and forth to a number of online stores' websites. And then they were looking at the price of the product appeared on the websites. This action was coded as assumed compare prices because there was no verbal communication made by the participants in the video. It was solely based on the researcher's observation that the participants explicitly show that they went back and forth from the same online stores' pages' moments before they made a purchasing transaction, or putting desired item into shopping cart.

26) Code 26 – Assumed Compare Brands

This action was spotted by the researcher during the video observation process when the participants selected to open different sellers on other tabs simultaneously. Or also different online stores' websites at one time. However, based on the researcher's remark, some of the participants were going back and forth to a number of online stores' websites. And then they were looking at the price of the product appeared on the websites. This action was coded as assumed compare brands of products because there was no verbal communication made by the participants in the video. It was solely based on the researcher's observation that the participants explicitly show that they went back and forth from the same online stores' pages' moments before they made a purchasing transaction, or putting the desired item into shopping cart.

27)   Code 27 - View or Select Product Option

During the observation, after the participants already have selected what product they wanted to view, they were on the product page for a while. After a while, the researcher noticed that some of the participants went to the product options drop-down menu to select product options such as its colour, size, types, materials and etcetera. Most of the products appeared on the participants' online shopping videos contained product that has options such as shoe polish, toddler's table, clothes, electric appliances, shoes, cosmetics and etcetera. This is another mostly spotted action done by the participants as they seemed to view different colours of the same product, different prices due to different sizes, different types of materials and more. Some of the participants viewed all the products' options while some of them only viewed a few options from the whole list. Some of the products have a long list of product options while some other products have to shortlist of options. From the observation as well, some participants viewed the product options and other information appeared such as 'sold out' and 'not available' situated next to the product options list. The following figure shows a screenshot of a participant who viewed product options on colour of product.

Figure 59: A screenshot of a participant who viewed product options on colour of product.

28)   Code 28 - Select Product from Other Recommended Product Option

During the video observation, some of the participants, while viewing the product they selected from the product list, also have selected product listed from the 'Other Recommended Product' option. Through this option, the participants can view the items related to the product according to the option title stated. The researcher also noticed that some participants just had a quick view while viewing the product from the recommendation list but some other participants viewed approximately just as long as how they viewed the first product, or the first choice of product.

The participants who selected and viewed the products from the recommendation list were observed to have viewed their second options because those products were viewed after their first product selection. Some of the participants instantly clicked on one of the product from the product option. That means, they viewed the recommended options product at the very same page of the first choice product. When they did that, it was observed that the page changed from the first choice product page to the second choice of the product page. While some other participants went back to the previous first choice product page however some participants remained on the second choice product page. Other than that, the researcher also noticed that some participants viewed more than one choice of products from the recommendation list. They opened those selections in other tabs.

29)   Code 29 – Logging in websites' pages

During the observation, the researcher found that the participants not only viewed the product pages that appeared on the website, but also logging in the websites, basically where they registered as subscriber or members. Majority of the participants were having memberships of certain web stores as sometimes, the video appeared their name on the website as showing that they already logged-on. Besides, when they log-in, the website already stored their details as observed by the researcher. However, there were also some of the participants who did not become the members but merely browsing around the webpages as guests, even until check-out to those who bought items, who were still proceed to check out process as guest.

30)   Code 30 - Add Product to Watch List

Some participants were seen to have viewed a few products while browsing online from their videos. The researcher noticed that, some of the participants viewed a different kind of items at a time and also some same kind of items but different brand. However, they were seen to have put some of the items they viewed into the 'Watch List'. After the participants opened the product pages they selected earlier, they were then viewed each of the items on different tabs. After that, they were seen to stay on the product page for a while then clicked on the Watch List button. Based on the researcher's observation too, some of the participants visited the Watch List page and went to see the whole list of their marked items on the list. The other terms for putting product into a watch list are; 'Watch this Item' and 'Add to Wish List'. The following is a figure of a participant clicked on the 'Watch List' button appeared on a product page.
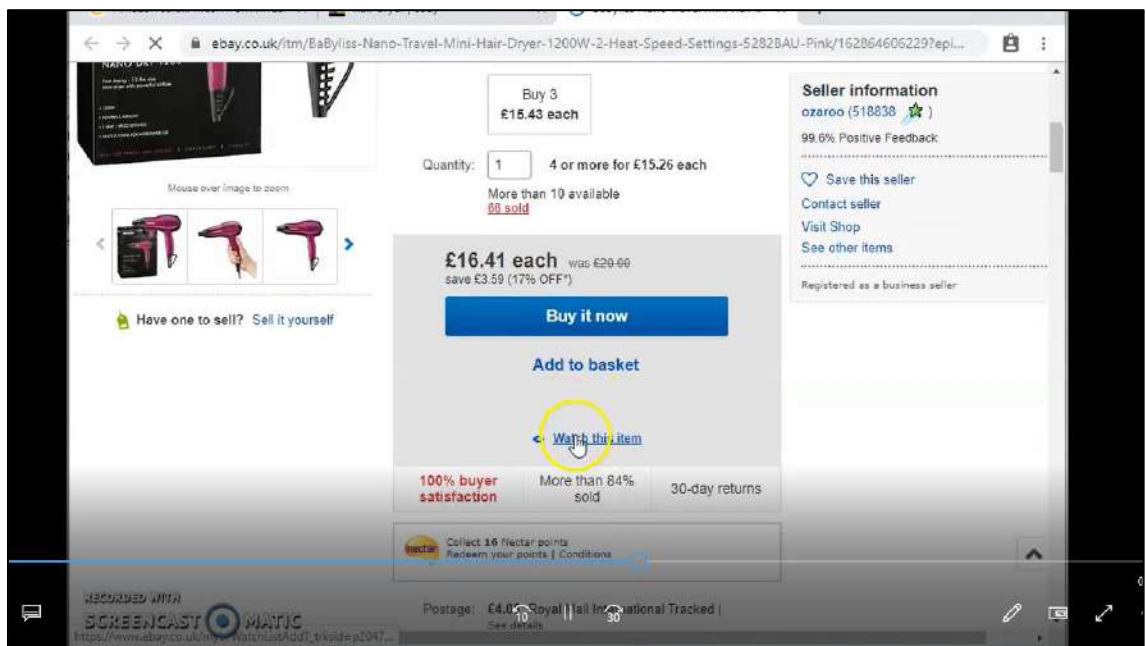
Figure 60: A screenshot of a participant clicked on the 'Watch List' button appeared on a product page.

31)   Code 31 - Add Product to Cart

As this is a user study that intended to observe and understand how online shoppers were conducting online shopping or online purchasing, adding a product to cart is one of the most necessary steps taken and done by the participants.

Based on the researcher's observation, the process of putting items or products into cart were done towards the end of the whole online purchasing or shopping video recordings. However, a few participants were also noticed that they did the step in the middle of their video recording duration. There are other terms used from various online store websites and online market places such as;

a) Add to Basket

b) Add to Bag

c) Add to Trolley

d) Add to Shopping Cart

All of the above terms used to bring the same meaning which aiding the online shoppers to put aside their desired items before they were asked to continue to the payment process. The following is a figure on a screenshot of a participant clicked on a 'Add to Basket' button.

Figure 61 A screenshot of a participant clicked on a 'Add to Basket' button.

32) Code 32 - Fill Up the Payment Form

The next step was taken by the participants as observed by the researcher, and after they have put their desire to buy items into cart, is filling up the payment form. Majority of the participants already have their bank account details recorded and saved by certain online store websites. Therefore, during the stage of filling up payment form, the participants were seen to write down a few initial information before the systems or Google called up the remaining details and appeared in the details boxes in the form. The details that were spotted filled by the participants such as;

a) Username

b) Password

c) Types of a debit card or credit card

d) Bank account number

e) Billing address

f) Options of payment method (online banking, card, PayPal and etc.)

The following is a figure that shows a participant was filling up the payment form in an online store's website.

33) Code 33 - Make Payment

At the end of the online shopping videos, some participants did purchase only one (1) item despite browsing for more than one (1) item and also bought more than one (1) items from the list of the product viewed. After filling up the payment form as observed as the previous action is done, the participants were seen confirming the purchases transactions. During confirming the purchase process, the researcher has spotted that the participants clicked on 'continue' or 'confirm' button on a page that shows the summary of item(s) purchased by the participants. After the participants clicked on the button, another page came up which showed the address of participants and also the summary of purchases as shown earlier. The following is a figure of a screenshot that shows a participant who clicked on the 'Continue' button.

34) Code 34 - Review Purchase Details

In the video observation, the researcher could have noticed that after the participants make payment and have confirmed their purchases transaction, another page turned up in the

videos which are review purchase details page. In the 'Review Purchase Details' page, the details appeared were as follows;

a) Purchaser's name

b) Address

c) List of items purchased

d) Billing address

e) Payment method is chosen

f) Total bill

g) The option of changing address

h) Option of printing receipt

The figure below shows a screenshot example of a participant who was viewing the review purchase details page that includes most of the details listed above.
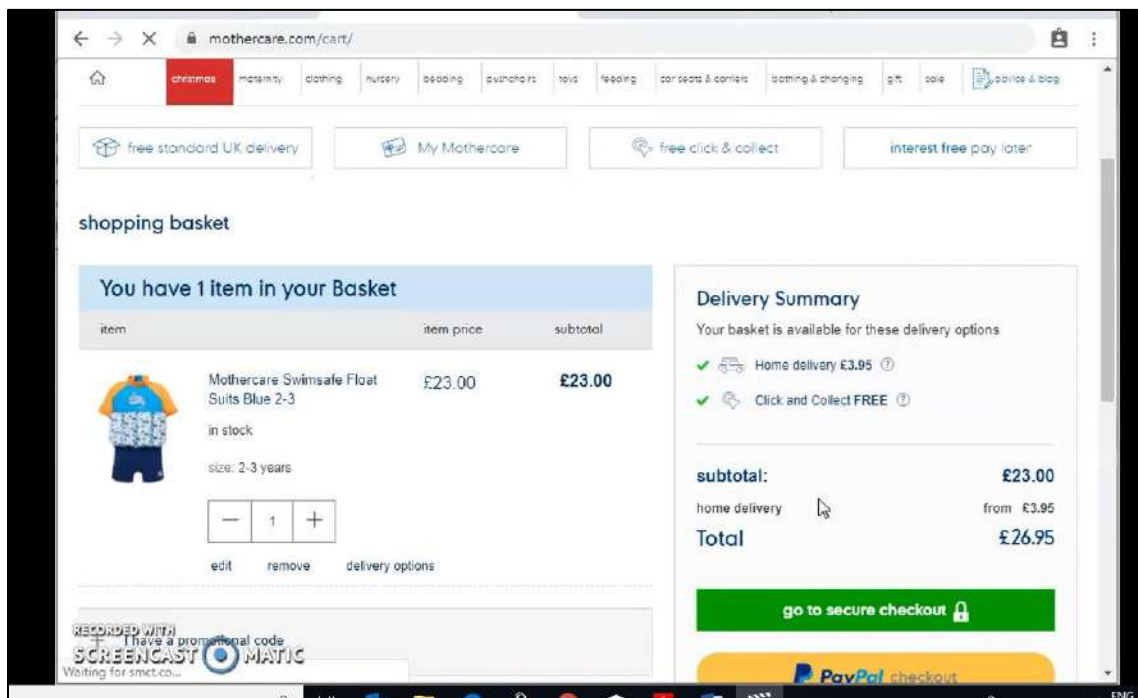
Figure 62: A screenshot on a participant who reviewed purchase details.

5.7.6 Video Observation Analysis for User Study Phase 2

In this section, this study presents the analysis constructed based on the observations of all one hundred and fifty videos (150), which was about one (1) week video diary of online shopping activity recorded and sent by the thirty (30) respondents (online shoppers) in User Study Phase 2. The further points explained in the analysis below indicated the participants' preferences, tendency and interests in online shopping and/or browsing activity.

- Types of products bought

    There are two types of products bought by the participants in this study which are a *search for goods* and *experience good*s. The definitions of both goods were already explained in the User Study Phase 1 and as according to Klein (1998) and Lu *et al,.* (2014).

Based on the online shopping videos observation in User Study Phase 2, the majority of the products involved represent the examples of goods as according to Huang et al,. (2009) study. The examples of goods are as follows;

- Search goods: shoes, home-furniture, garden implements, electronics, movies, games, automobiles, restaurants and etcetera.
- Experience goods: automotive parts and accessories, health products, cosmetic and beauty products, camera equipment, medicines, services (haircut, travel, legal) and information-based- product such as books.

From the video observation, the products observed as searched for and bought by the participants in their videos, and according to the types of goods as described above, are as follows;

- Search goods;

    a.   Shoes and accessories- running shoes, coat, bag pack, winter boots, watches, adult swimwear, in-line skate, handbag and shoe polish. 4/9

b.	Home-furniture –rugs, wallpaper, wireless vacuum and trampoline 2/4

c.	Electronics - electric airier, hand-blended, steam iron, e-cigarette, heater, smartphones, hairdryer and mixer 3/7

d.	Baby stuff – kids' swimwear, Teether, toys, art crafts and drawing pencils set and kids bed and baby carrier.3/6

- Experience goods;

a.	Health products – healthcare(supplement), ointment oil

b.	Beauty products – skincare, body care, cosmetics make-up.

Based on the analysis above, the total number of product bought by the thirty (30) participants in User Study Phase 2 are;

o	Twelve (12) search goods, and,

o	and three (3) experience goods,

and the total number of products were being searched for by the thirty (30) participants in User Study Phase 2 are;

o	Twenty-six (26) search goods, and,

o	and five (5) experience goods,

Besides, the analysis of product types bought by the participants in this user study also indicated by their gender. It means, the next analysis result shows that the number of products bought from each product type is based on the participants' gender. From the researcher's observation;

o	the female online shoppers bought twenty-two (22) items, where nineteen (19) are search goods and three (3) are experience goods and,

o   the male shoppers bought nine (9) items, where seven (7) are search goods and two (2) are experience goods.

Since the female online shoppers are the majority group and male online shoppers are the minor group, understandably reported that female online shoppers bought search and experience goods more than the male online shoppers in this User Study Phase 2.

- Number of online purchases

Based on the observation, this user study found that there were twenty-three (23) male shoppers and seven (7) female shoppers. The total number of online purchases as observed in the online shopping videos are fifteen (15) items. The number of purchases made by the participants according to their genders is as the following;

o   Male shopper reported having three (3) purchases where

o   Female shopper reported to have twelve (12) online purchases.

The ratio of online purchases by gender indicated that;

o   1:0.5 for Male shopper which means every single or one (1) male shopper purchased at least 0.5 product.

o   1: 2 for Female shopper which means every single or one (1) female shopper purchased at least 2 products.

Based on the ratio results female shoppers in User Study Phase 2 reported having a higher ratio of online purchases. Given the significant gap between the number of male participants and female participants, hence the different ratio results.

- Online store memberships

Based on the observation from the login activities and personal details appeared on the shopping websites' pages, this study found that all of the participants are subscribed to memberships of online stores such as Amazon, Marks and Spencer and Lazada Malaysia. The following are the further analysis result of membership subscriptions by gender, as observed by the researcher;

o   Female online shoppers observed to have an average of ten (10) online stores memberships.

o   Male online shoppers observed to have an average of thirteen (13) online stores memberships.

•   Online stores and market places visited

During the observation process, the researcher marked and recorded the name of the online stores and online market places aside from the codes.

The list of online stores and market places is available at the section 5.6.7 Summary of Video Observation Notes, under the point of Code 3: Search for Products. From the input, this study figured out the most and the least visited online stores' website pages. The following details presenting the list of both the most and the least visited shopping sites;

o   There are three (3) most visited online stores observed in the videos. The following details show the number of total participants who visited the stores and below is the hyperlink of those online stores or marketplaces and also the products searched for or bought from the sites;

1)   The Amazon UK website received a total of twenty-six (26) from the total thirty (30) participants visited https://www.amazon.co.uk/ . The products observed as searched for from the Amazon UK website are;

    a.   Skincare

    b.   Body care

    c.   Hairdryer

    d.   Ointment oil

    e.   Electric airier

    f.   Running shoe

    g.   Kids swim wear

h.   Coat

i.   Teether

j.   Rugs

k.   Toys

l.   Art Crafts

m.   Hand blender

n.   Bag pack

o.   Winter boots

p.   Heater

q.   Steam iron

r.   Kids bed

s.   In-line skate

t.   Adult swimwear

u.   Wallpaper

v.   E-cigarette

w.   Wireless vacuum

x.   Watches

y.   Baby carrier

z.   Shoe Polish

2)   The eBay UK website received a total of fifteen (15) from the total thirty (30) participants visited https://www.ebay.co.uk/ . The products observed as searched for from the eBay website are;

a.   Steam iron

b.   Trampoline

c.   Toys

d.   Teether

e.   Adult swimwear

f.   Hand blender

g.   Kids swimwear

h.   E-cigarette

i.   Heater

j.   Running shoe

k.   Shoe Polish

l.   In-line skate

m.   Electric airier

n.   Hairdryer

o.   Wireless Vacuum

3)   The Argos UK website received a total of twelve (12) from the total thirty (30) participants visited https://www.argos.co.uk/. The products observed as searched for from the Argos UK website are;

a.   Wireless vacuum

b.   Laptop fan

c.   Hand blender

d.   Mixer

e.   Smart Phones

f.   Hairdryer

g.   Toys

h.   Trampoline

i.   Electric Airier

j.   In-line skate

k.   Steam iron

l.   Baby carrier

o　　There are three (3) the least visited online stores as observed in the videos. The following details show the number of total participants who visited the stores and below is the hyperlink of those online stores or marketplaces;

1)　　The Lazada Malaysia website received a total of three (3) from the total thirty-five (35) participants visited https://www.lazada.com.my/. The products observed as searched for from the Lazada Malaysia websites are;

　　　a.　　Health Supplement

　　　b.　　Make-ups

　　　c.　　Essential oils

2)　　The Works UK website received a total of two (2) from the total thirty (30) participants visited https://www.theworks.co.uk/. The products observed as searched for from The Works UK websites are;

　　　a.　　Artworks

　　　b.　　Arts drawing pencils

3)　　The Selfridges UK website received a total of two (2) from the total thirty (30) participants visited https://www.selfridges.com/GB/en/. The products observed as searched for from the Selfridges websites are;

　　　a.　　Designer make-up product

　　　b.　　Handbag

•　　The average duration of online shopping transactions

The next analysis is concerning the duration of online shopping or online purchasing transactions of the participants. Based on the video observation, the duration of online shopping measured for each product. Since the products bought by the participants in this

user study fall into two types; search and experience goods, thus the analysis result is also by product type.

o   By product type: Search Good

The example of products in the user study that fall in this category are such wireless keyboard, ice packs, shoes and kindle. The longest time spent on purchasing a search well in this study is twenty minutes (20) and the product is air-fryer. The shortest duration recorded in this study was buying a gas hob filter paper, which is just six (6) minutes. Thus, the average range of time spent on a single search good online purchasing is between fourteen (14) to fifteen (15) minutes per one search good product

o   By product type: Experience Goods

The example of products in the user study that fall in this category are such books, gym health supplement and cosmetic beauty product. The longest time spent on purchasing an experience good in this study is forty-two minutes (42) and the product is cosmetic make-up or beauty product. The shortest duration recorded in this study was buying a physics book, which took the participant fifteen (15) minutes before deciding to buy. Thus, the average range of time spent on a single experience good online purchasing is between twenty-five (25) to twenty-six (26) minutes approximately per product.

•   The average duration of online browsing activity

The next analysis is concerning the duration of online browsing of the participants. Based on the video observation, the duration of online browsing measured for each product. Since the products searched by the participants in this user study fall into two types; search and experience goods, thus the analysis result is also by product type.

o   By product type: Search Good

The example of products in the user study that fall in this category are such wireless keyboard, ice packs, shoes and kindle. The longest time spent on browsing a search

215

well in this study is twenty minutes (20) and the product is air-fryer. The shortest duration recorded in this study was browsing on a gas hob filter paper, which is just six (6) minutes. Thus, the average range of time spent on a single search good online browsing is between fourteen (14) to fifteen (15) minutes per one search good product.

o   By product type: Experience Goods

The example of products in the user study that fall in this category are such books, gym health supplement and cosmetic beauty product. The longest time spent on browsing experience good in this study is forty-two minutes (42) and the product is cosmetic make-up or beauty product. The shortest duration recorded in this study was browsing a physics book, which took the participant fifteen (15) minutes before deciding to buy. Thus, the average range of time spent on a single experience good online browsing is between twenty-five (25) to twenty-six (26) minutes approximately per product.

•   The use of online customer reviews

This user study was intended to see and investigate if there were any chance of the online customer reviews to be involved in the participants (online shoppers) online shopping activity. This section presented the analysis that resulted from video observation about how the online shoppers engage customer reviews, in three (3) perspective;

o   The average duration of visit per review page per participant.

The longest duration recorded on participants' view on a single page of reviews is 3.4 minutes and the shortest duration is 1.2 minutes and thus the average duration is approximately 2.5 minutes per page. This means, each of the participants spent averagely 2.5 minutes on a single page of online reviews.

o   The average number of review pages visited per participant.

Approximately, the average number of review pages visited by the thirty (30) participants is thirteen (13) pages. The highest number of review pages visited is twenty-two (22) pages and the lowest number of review pages visited seven (7) pages per person or participant.

o   The most and least online store's customer reviews system visited.

There were varieties in terms of the review systems appeared as visited and seen in the participants' videos. The online customer reviews systems that mostly visited is the reviews system in Amazon UK where it received twenty-six (26) participants' visits. While the least visited online customer review system is in The Works UK website where it received only two (2) participants' visits.

During the observation process, the researcher marked and coded when the participants were appeared on visiting customer reviews pages. The coded pages of reviews were then being cross analysed with the products bought by the participants. The analysis below will present the most and the least visited customer reviews pages and what products bought by the participants who were viewing the most and the least online customer pages stated below.

- The most visited online customer reviews page
  Among the most visited online customer reviews pages are Amazon UK, Argos UK and eBay UK. Aligned with the stores being the most popular and most visited by the participants in this user study, therefore it is logical to regard that the online stores also have recorded the most visits received from the participants on their online customer reviews sections on each product viewed. Based on the observation, examples of product bought by the participants (the ones who made to the checkout phase as observed) are such ointment oil, heater and skincare.

- The least visited online customer reviews pages

    The least visited online customer reviews pages are many where they received only two visitors only form the participants of this study. Based on the researcher's observation, some unique product that sold by the particular website or perhaps the least preferred of the 'go-to' web stores by the participants lead to this score. For example, the The Works UK store, the observation report noticed more visits on Amazon for art works products and very least visits for the The Works UK. However, the participant who visited the web store were still viewed the online customer reviews section. The example of products bough from those online stores are art crafts and art drawing pencils.

From the video observation report and the cross analysis of the most and the least viewed online customer reviews pages with types of product bought, this study found out that;

- Two of the experience good, which are ointment oil and skincare have made the buyer (participant) to frequently visit the most visited online customer reviews section, the Amazon UK web store.
- While as for the search goods such as art crafts and art drawing pencils, the participant who bought the product did not frequently visit the online stores that have the least visited online customer reviews; The Works UK.

Again, same as in User Study Phase 1, the analysis findings above have supported that experience goods involve greater depth (time per page) and lower breadth (total number of pages) of search than search goods as discussed in Lu et al. (2014) study. At the same time, differences in the type of information sought for search and experience goods can precipitate differences in the process through which consumers gather information and make decisions online.

•   Close-Up screenshots of reviews' pages visited by participants

Based on the observation report, the study has observed that lead to the establishment of a few patterns on the use of customer reviews based on what appeared during the participants' visit. Other than the product image, some information on the product page can be clearly observed by the researcher. The same goes to customer reviews page. There were a few similar phrases or words used by the reviewers who have written and contributed their reviews of product on the customer reviews sections.

The following screenshots show the result of analysis, on what kind of phrases, words, and context, that were repetitively appeared, means more than one (1) time as observed by the researcher. Note that, the analysis below is merely on observation basis as the interview session was not yet conducted during the observation analysis period.

o   Reviews about the quality of product and services

There are a lot of pages visited by the participants that appeared to have reviews about the quality of the particular products. Besides, the word quality also frequently associated with the reviews about the customer service of online stores or websites. The following figure is a screenshot that appeared to have displayed review about quality when the topic of reviews clearly states the phrase 'Quality Paper'. Besides, the word quality not only appeared as in sentences from the written reviews, but also in the form of ratings as displayed in some online customer reviews systems.

Refer to the figure below on the right side of the reviews (from the reader's view), that there is a rating about quality displayed next to the written review. The following figure is just one (1) example but more pages alike and reviews that mentioned the quality appeared on the participant video. Based on the length of the visit of the review page that contained the word quality, this study assumed that the participants were probably read about quality when looking at the customer reviews pages.

The figure shows a screenshot of reviews about wallpaper, item in section 5.7.6 above, which is bought by one of the participants. The reviews appeared stated that

the wallpaper is a good quality paper. The product has perfect scores of all three (3) ratings associated with, Ease of Use, Quality and Value. The reviewer mentioned that the wallpaper featured well in the bedroom. It went up the wall easily. It is a thick quality paper at a good price and looks great. It has pleased the reviewer. It was five stars rated too and this reviewer recommended this product.
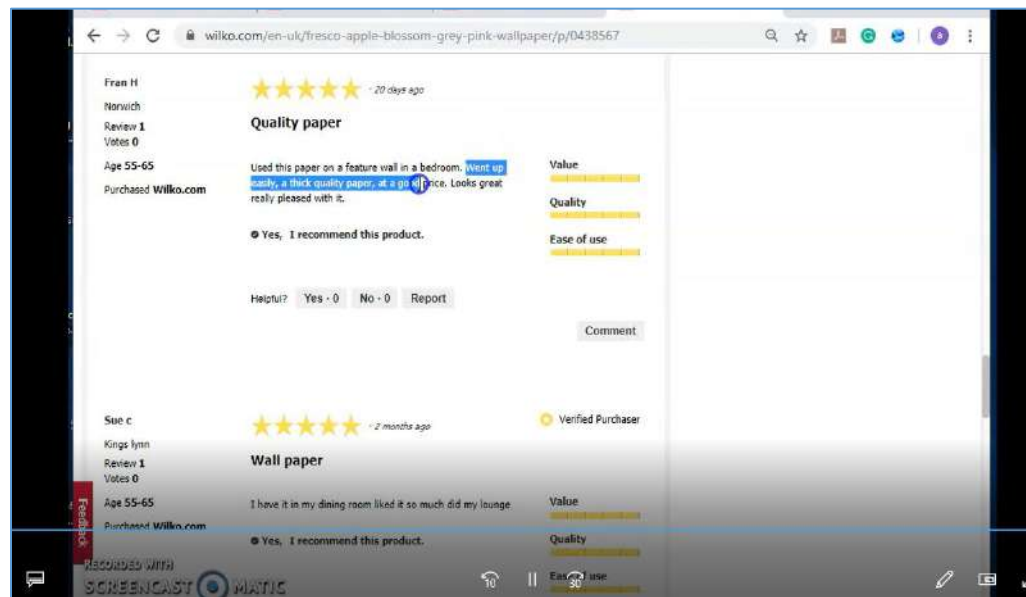
Figure 64 The screenshot of quality reviews

o   Reviews about values (value of the product, value for money, etc)

Other than a review about quality, there are other pages visited by the participants that appeared to have reviews about value. Also, the word value for money always seen frequently associated with the reviews about the recommendation of products written by the reviewers. The following Figure 41 is a screenshot that appeared to have displayed review about quality when the topic of reviews clearly states the phrase 'Value for Money'. Besides, the word value for money not only appeared as in sentences from the written reviews, but also in the form of ratings as displayed in some online customer reviews systems. Refer to the previous figure, that there is a rating about value displayed next to the written review. The following figure is just one (1) example but more pages alike and reviews that mentioned the value for money appeared on the participant video. Based on the length of visit of the review page that contained the word quality, this study assumed that the participants were

probably also read about values of product or value for money when looking at the customer reviews pages.

From the screenshot, we can see the reviews written appeared on the page has two topics; 'Great price, does exactly what I need' and 'Value for money'. From the reviews, it stated that the product, food processor, as item in section 5.7.6 above, bought by one of the participants. The review mentioned that the food processor is cost-effective and just as what the reviewer wanted. It has arrived at the reviewer quickly too. Another reviewer mentioned that the product is really good value for money. The product was bought a month ago and had no problems encountered since. The product is claimed as powerful by the second reviewer as it fits together well. Although the size is huge, more importantly it does its job. The reviewer stated that the product is wished that it could last a long time. The first reviewer rated 5 stars while the second-rated 4 stars for the food processor.
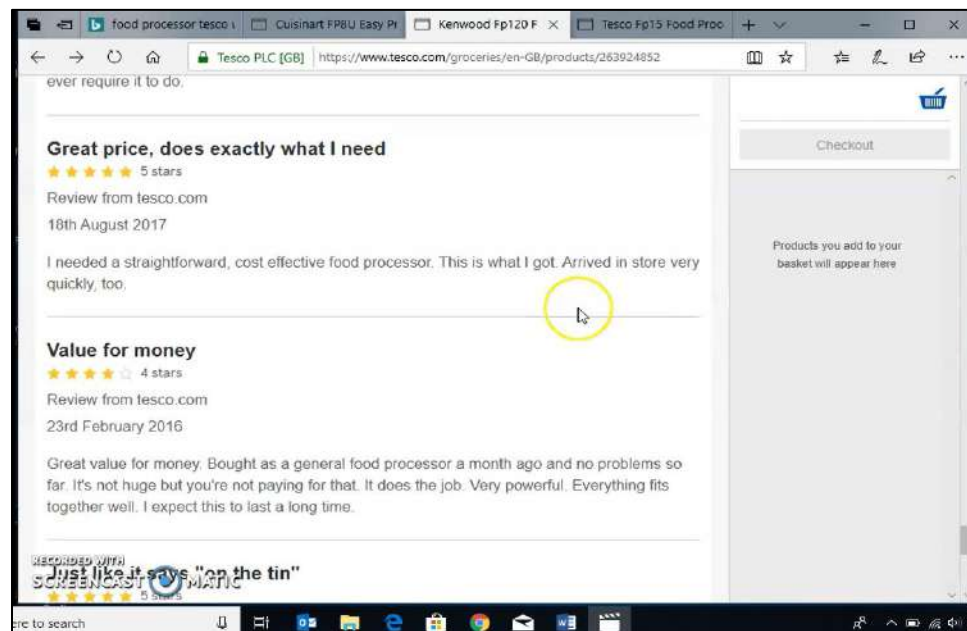
Figure 65 The screenshot on value for money reviews

o   Review about experience context (using products, delivery, etc)

Other than reviews about quality and values, another significant repetitive kind of reviews that always appeared on the participants' videos reviews on the context of experience (using product, customer service, delivery method, and etc). It is said as

context because the reviews about experience used vary of adjectives and nouns that usually not the same to each other experience reviews. The review distinct based on product, the users and their own experiences. The reviewers were obviously the users of the product based on how they claimed the way they have been using it and the experience associated. The following figure shows a screenshot about reviews written by two users about their experience of using a heater, an item in section 5.7.6 above.

Based on the observation, there is one pattern emerged about reviews of experience context, usually the reviews are lengthy. For example, as in the figure, there are two reviews that have more than two (2) lines of reviews. The first reviewer is observed as a verified purchaser and has voted for writing helpful reviews based on one (1) vote record stated. In summary, the first reviewer was happy that the heater seems very good as it kept the living room warm all day in automatic setting. It means, the heater will switch off itself when the surrounding temperature has met the desired temperature set on the heater. However, the reviewer was a little unhappy about the remote as it was expensive, hence lack of stars given, but had bought another heater for office use. From the first reviewer comment, the study has observed how the experience of using it is explained. For instance, what made the reviewer happy or not happy, how did the heater was functioning, and why not full stars' vote was given.

As for another reviewer who has highly recommend the product, based on what stated nearby its name. There was a full star's vote given to this product from the next reviewer. In summary, the second reviewer mentioned the second purchase of the heater. According to the reviewer, the heater is most powerful compared to the first one. The heater kept the lounge warm and it was quiet and easy to be used with remote control. The heater heated quickly and made the temperature comfortable within short time. The heater also claimed as cheap with strong performance. From there, we can see that the reviewer was observed being happy about the product based on the positive tone of reviews written. Besides, the reviewer received three (3) helpful votes. Compared to the first reviewer, the second reviewer seemed satisfied with the remote control as it made him easy to use the heater.
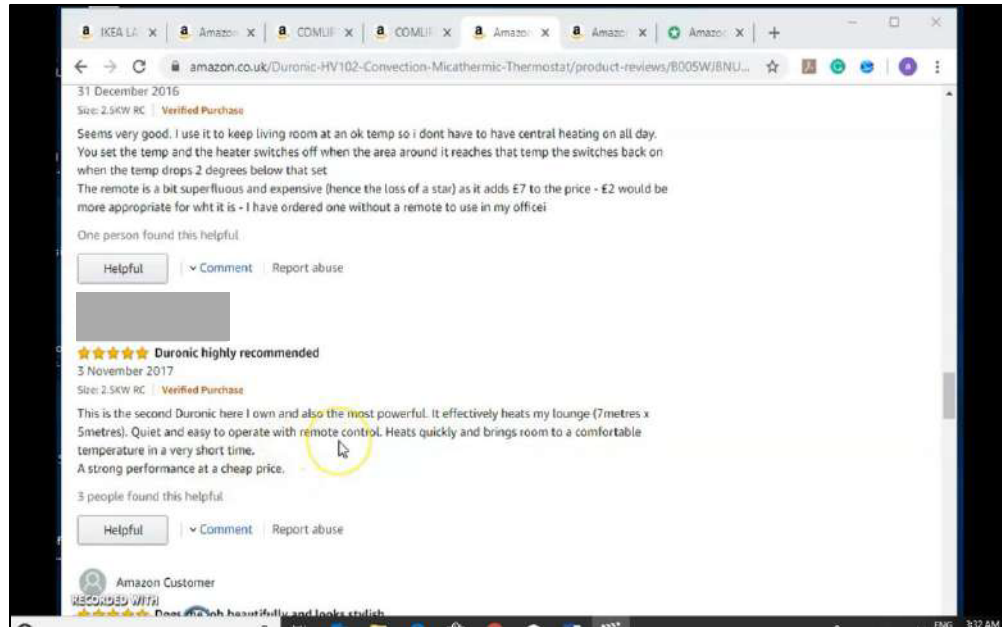
Figure 77 The screenshot on user experience reviews

o   Review about customer service (delivery, product exchange etc)

Next reviews that mostly spotted during the video observation was about customer reviews of the online store such as delivery service, product exchange and return service, customer care-lines and etcetera. From the screenshot below, it shows the reviews from a toddler table and chair set product in Amazon. One of the participants has viewed this page about reviews of toddler table and chair set. From the observation of the researcher, the participant seemed to stay a little bit longer while visiting this page. thus, it was assumed that the participants perhaps were reading the reviews. These reviews were about the experience of a mom who was satisfied and happy with her purchase. Not only that, the reviewer explicitly mentioned 'SUPER FAST DELIVERY 'in her title of review. From there, we can see that she is highly satisfied with customer reviews.

In this section, the focus is on what review was written about the delivery service. Apart from the experience of using the product, the other experience counted is about the delivery service. The reviewer said that the delivery was super-fast and no complaints or whatsoever indicated regarding the service. The interesting point

223

here is, in many reviews about the product, there will be one or two sentences about pleasing or complaining the customer service included. From there, the researcher observed that some online shoppers really like to highlight if they feel satisfied or dissatisfied regarding the customer service of the online store's or brand. customer service is one of the most important factors for online shoppers (Yee et al,. 2014). The figure below is one of many other examples that alike about highlighting point of customer service. As the reviewer feel so pleased, then given 5 stars score for the product.

Thus, customer service is one of the most frequent points of review observed as always appeared on the reviews page visited by the participants.
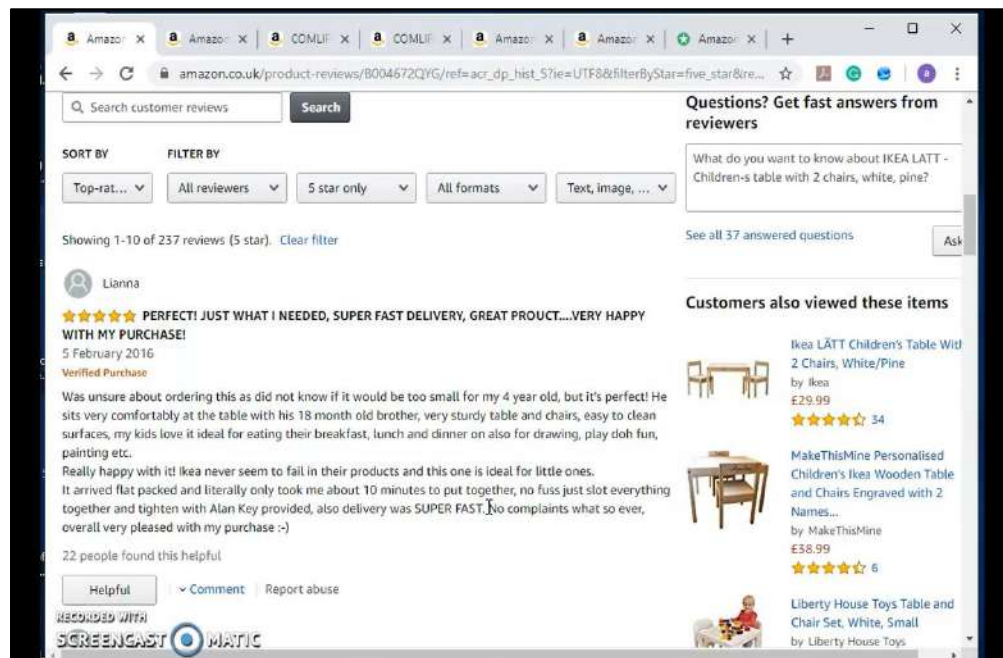
Figure 78 The screenshot on customer service reviews

o   Review about satisfaction

Finally, another type of reviews that quite frequently noticed as viewed by the participants in this user study phase 2 is reviews about satisfaction. Mostly, the reviews on satisfaction are described as a story of how a product solved their issues or problems, or how the product has completed their needs and also how the products have satisfied their user experience while using the product. Some of the reviews are lengthy and short. The majority is short as some of the reviewers

224

probably only highlighted the significant effect of satisfaction they felt while using the products bought. As for the example in the figure below, the reviews are about UGG winter boots screenshot. The review was viewed by a participant who interested to know more about winter boots. The participant seemed visited at this particular of the page as the researcher assumed was reading the review. The review was mentioned three aspects of reviews which are, the Cons, Pros and Best for points of the boots. In Cons point, the comment is difficult to entry and to exit the boots. The Pros points are Comfortable, Lightweight and Stylish. And lastly the Best For point is cold weather, which means the UGG boots are best for cold weather. The reviewer was saying that she got the boots worn last week to work. At first, when she wore it, it was difficult for her to take off the boots. However, she was told that boots would expand and easier to wear later. Then she stated it is very lightweight and did not feel cheap like other sheepskin boots. This she claimed the boots kept her warm in cold weather.

Based on the researcher assumption, this reviewer is satisfied with the boots she bought as she mentioned twice how the boots are best for her during cold weather and kept her feet warm. Thus, she has given 5 starts score for the product and writes 'Nice and Warm' as the title of review to show how she felt satisfied with the product.
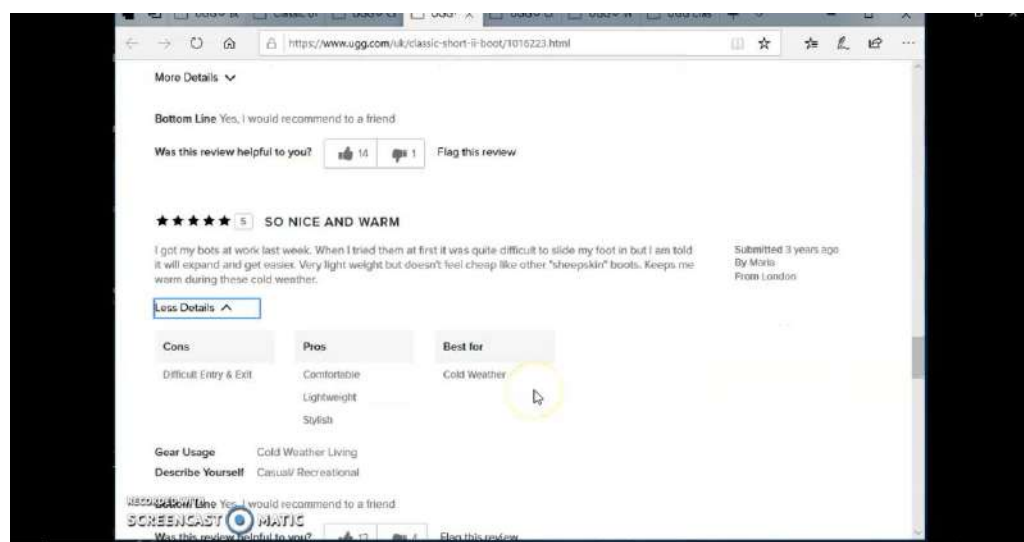
Figure 79 The screenshot on satisfaction reviews

- The average duration of online shopping transactions

The next analysis is concerning the duration of online shopping or online purchasing transactions of the participants. Based on the video observation, the duration of online shopping measured for each product. Since the products bought by the participants in this user study fall into two types; search and experience goods, thus the analysis result is also by product type.

o   By product type: Search Good

The example of products in the user study that fall in this category are such wireless keyboard, ice packs, shoes and kindle. The longest time spent on purchasing a search well in this study is twenty minutes (20) and the product is air-fryer. The shortest duration recorded in this study was buying a gas hob filter paper, which is just six (6) minutes. Thus, the average range of time spent on a single search good online purchasing is between fourteen (14) to fifteen (15) minutes per one search good product.

o   By product type: Experience Goods

The example of products in the user study that fall in this category are such books, gym health supplement and cosmetic beauty product. The longest time spent on purchasing an experience good in this study is forty-two minutes (42) and the product is cosmetic make-up or beauty product. The shortest duration recorded in this study was buying a physics book, which took the participant fifteen (15) minutes before deciding to buy. Thus, the average range of time spent on a single experience good online purchasing is between twenty-five (25) to twenty-six (26) minutes approximately per product.

5.7.7 Interview Data Analysis for User Study Phase 2

Based on observation on online shopping videos and interviews with the online shoppers who represent as informants in the consumer study, the following are the analysis made of the data collected. This research used Nvivo data analysis software in identifying the themes and codes that represent types of information that the informants read looked into and referred to through customer reviews in their online shopping activity. Based on data coding analysis, there were five themes or codes of data extracted as follows;

- **User Experience**

People look for cues that suggest the validity of reviews based on its content such as experiential reviews which focuses on the reviewers' own experience in using or buying the product (Xia and Bechwati 2008). Through the observation of online customer reviews usage in the videos, a researcher noticed that the informants were reading about people's experiences in the customer reviews. The observation was confirmed by the informants through interviews when they mentioned that they did look into the experience of other users when reading the reviews. The following are some quotes from the online shoppers who claimed on reading the user experience in customer reviews;

*"Well, this is my first time, so any kind of information from the **experience of other buyers** is important for me to know of. For example, I could know about the baby carrier material quality, how different type of baby carrier gives impacts to the parents' body, which design is ergonomics and which not."*

(Online shopper 4, User Study 2)

One of the reason they look into the user experience customer reviews is because when they wanted to know in depth about other user's experience on using the product that probably the participant was interested to buy too such as the following;

*"For example, if I buy electrical stuff, it is quite hard to tell unless you have been using it or buying it previously so yeah I will look into reviews to find out **people's experience** of using the stuff. Besides, different seller sometimes put different prices on the same product so I'd like to know as well what people say about the price."*

(Online shopper 21, User Study 2)

Besides, some participants were looking into user experience reviews to find some important information regarding the use of product. Sometimes, only after experience using for some product for a while, only then you will get the idea on how the product is actually works;

"I read the customer reviews to find out more about using halogen heater with remote control. I have never use halogen heater with remote control and usually, when a product is quite advance in technology, they also have tendency to quickly get broken. For example the oven with stoves attached together. That's is why I look into people's say about their experience in using halogen heater with remote control."

(Online shopper 13, User Study 2)

- **Value of Money**

As for this second type, Value of Money, this is kind of important information that common people also looked into in customer reviews as most online shoppers concern about their value of spending and rather wanted each purchasing is worth every penny they spent (Bronner *et al,*. 2011). The interviews conducted has revealed some claims from the informants themselves that they looked into how other buyers commented about the value of money buying the products that they eyed for in the videos. The following are some quotes from the informants mentioning the value of money as an information kind that they interested in when reading customer reviews.

*"When I read a customer review, I'm looking for comments that say whether it is **worth my money,** whether it is cheap but its good quality. Same goes to travel stuff; reviews play an important factor because you would know people's good and bad experience about that place."*

(Online shopper 3, User Study 2)

Besides of wanting to know the value for money, some participants also read on reviews about value for money to see how worth buying the product especially when it is an exclusive good such as designer handbag as the following participant;

*"What I like about the review is it is well explained about the durability of the leather which is not easily got scratch, what departments does the bag have and what sort of stuff that we can put in the bag. This is the most important part of the review about the handbag because I want **my money worth** to buy that bag."*

(Online shopper 5, User Study 2)

Other factor that lead the people to look for the value for money reviews is because intended to figure out further about some high performance and expensive product such as food processor's value as the price is not cheap as well;

"The reason I look into the customer reviews for this product, food processor is because I wanted to have one but kind of scared as it might be not so useful for me. You know, the price is not cheap, so I was browsing around to see what people say about their experience on using it, how is the quality, does it tally with the price value. So yeah that's why I look into the reviews."

(Online shopper 26, User Study 2)

- **Product Quality**

The customer reviews play an important role as a mean of communication among customers about the quality of the product (Etzion and Awad 2007), and that literature finding has again supported the claims made by the informants through reviews that they were looking for reviews about product quality when reading customer reviews. The following are some example of quotes taken from the informants about finding reviews on product quality is important when reading customer reviews.

*"I started to look for reviews because we must know what this product reviewed by others, either this is a **good quality product or bad quality products.**"*

(Online shopper 12, User Study 2)

Besides, another reason to look into information about product quality is because to find out some negative reviews first bout the product quality, as according to this participant, by looking into negative reviews, they can find out the truth of the quality of product;

*"When I read reviews, most of the times, I will look for any negative things about a product. For example, in this cooker hood product, I'd like to know whether it is too thin, whether it fits well, whether the **quality of the product** meets the price tagged."*

(Online shopper 24, User Study 2)

- **Customer Service**

The fourth scope of important information that the informants looked for based on observation in their online shopping videos is, about the customer service. Through the interviews, the following are some examples of quotes that informants claimed to have looked and concerned about customer reviews matters when they engaged with reading customer reviews on their product study process.

*"When I read reviews, what I concern the most is customer service. For me, it is very important because if anything happens to my purchases, I know how the **customer service** will handle it."*

(Online shopper 18, User Study 2)

Other reason to look into customer service reviews is because to know about delivery charges and its services as the following participant;

*"In the reviews, mostly I looked into their **customer service,** especially on the delivery charges. That is why I like Lazada because it's always free delivery charges."*

(Online shopper20, User Study 2)

- **Recommendation**

The last key important information that the informants looked for when reading customer reviews is about people's recommendation. Assessing and searching text reviews, however often frustrating when users only have a vague idea of the product; hence, people need recommendation reviews (Ganu *et al,.* 2009). Based on the literature, the consumer study has confirmed that people do really need a recommendation from other users about the product after a series of evaluation on other aspects. That is the utmost decision aid that online shoppers need before came to the final decision whether to buy or not to buy. The

following are quotes from the informants during the interview showing what they read about people's recommendation during online shopping.

*"From the reviews, I found that most of the buyers are unhappy, and it is **recommended** to buy other brands of cooker hood filter that offer great thick."*

<div align="right">

(Online shopper 15, User Study 2)

</div>

One participant viewed an opinion about finding information of recommendation is because there are some reviews from experts or individuals that does not have the recommendation votes from other reviewers such as from review blogger;

*"In this food review blog, it mentioned that the signature and must-try is their white coffee and also the chicken Kueh Tiow as the **recommendation** of the consumer."*

<div align="right">

(Online shopper 7, User Study 2)

</div>

5.8 Summary of Primary Research Phase 2 Findings

There are five key dimensions of reviews information as identified through primary research indicating reasons people look into customer reviews; User Experience, Value for Money, Product Quality, Customer Service and Recommendations. Based on the literature, few findings were indicating, directly and indirectly, the scope of information that people look into when using or reading online customer reviews. As according to Yee *et al*. (2014), she claimed in her research that the online customer reviews provide information on various aspects of products such as the user post-consumption experience, product quality, and value for money, service quality and overall evaluation. The ethnographically-informed consumer study conducted has supported the literature about the scopes of important information dimension in customer reviews as the informants involved have revealed about what sort of information that they read, looked for and referred to when engaging customer reviews in their online shopping process.

5.9 Data Coding

Based on the analysis made on the findings of the ethnographically-informed consumer study from the previous section, the five key dimensions of important information revealed; User Experience, Value of Money, Product Quality, Customer Service and Recommendation, have been used as the themes or codes for the next task, Data Coding. Data coding is an important validation process to ensure that the codes well represent the important dimensions of information in customer reviews based on a percentage of agreement achieved by the data coders.

5.9.1 Emergent Coding and Priori Coding

There are two approaches to coding data that operate with slightly different rules. With emergent coding, categories are established following some preliminary examination of the data. The steps to follow are outlined in Hsieh (2005) and will be summarised here. First, two people independently review the material and come up with a set of features that form a checklist. Second, the researchers compare notes and reconcile any differences that show up on their initial checklists. Third, the researchers use a consolidated checklist to apply to code independently. Fourth, the researchers check the reliability of the coding (80% agreement; 0.61 – 0.99 for Cohen's and Fleiss's kappa). The figure below presented the table of result interpretation for Cohen and Fleiss's Kappa.

κ	Interpretation
< 0	Poor agreement
0.01 – 0.20	Slight agreement
0.21 – 0.40	Fair agreement
0.41 – 0.60	Moderate agreement
0.61 – 0.80	Substantial agreement
0.81 – 1.00	Almost perfect agreement

Figure 80 table of result interpretation for Cohen and Fleiss's Kappa.

If the level of reliability is not acceptable, then the researchers repeat the previous steps. Once the reliability has been established, the coding is applied on a large-scale basis. The final stage is a periodic quality control check. When dealing with a priori coding, the categories are established prior to the analysis based on some theory. Professional colleagues agree on the categories, and the coding is applied to the data. Revisions are made as necessary, and the categories are tightened up to the point that maximises mutual exclusivity and exhaustiveness (Weber, 1990). The procedures involved are likewise the emergent coding procedures.

This study decided to do both types of data coding to establish reliable and well-understood codes that best present the key important dimensions of information in customer reviews. This study started with Emergent Coding process then Priori Coding. Based on procedures as explained in the earlier paragraph, there are 20 appointed and briefed data coders for Priori Coding task while 15 data coders for the emergent coding task.

In Emergent Coding, the data coders have to come with their own words about what they interpreted the statements. In Priori Coding, the data coders have to select based on answer options given that they think best represent the statements upon their best judgement and interpretations. The following are the figures showing part of the document contents from both Priori and Emergent Coding Sheets.

Table 1.5: The example of statements on Emergent Coding Sheet

Statement 9	Answer
"Yes, I do read reviews because here, usually people when they buy the product, and they are not as what they expected, they will bash the product. They have touched and bought it, so their reviews normally reveal the true experience of using the product".	This statement is about;

Statement 10	Answer
"I'm looking for a review that says whether it is worth my money, whether the product is considered cheap."	This statement is about;

Table 1.6: The Example of statements on Priori Coding Sheet

Statement	Information codes;	Sub-codes;
''I found some reviews that claimed the cooker hood filter is not thick enough and so thin."	USER EXPERIENCE	Dealing with sellers
		Using products
		Purchasing process
	PRODUCT QUALITY	Features (e.g., size, looks, materials, weight, etc.)
		Characteristics (e.g., durability, functionality, etc.)
		Contents (e.g., music, film, book, etc.)
		General comment (e.g., good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
	RECOMMENDATION	To buy this product or from this seller.
		Not to buy this product or from this seller
		Buy from other brands or other sellers.

	VALUE OF MONEY	Worth the money spent.
		Not worth the money spent

5.9.2 Reliability and Validity Checks on the Data Coding Results

It is important to assess the reliability and validity checks of the codes established through the data coding analysis done in the previous section. In the reliability checks, two main dimensions aimed to be achieved, which are the stability and reproducibility checks. The stability check is also defined as *inter-coder reliability*, where the process involves examining whether the same coder rate or code the data in the same way throughout the coding process. As for validity, indicating that only if it measures what it is supposed to measure, but one can only ask about that if it is in the first place reasonably reliable. So validity checks should, in theory, follow reliability checks (Lazar *et al,*. 2010).

The results of Emergent Coding were calculated using Fleiss's Kappa, Percentage Agreement and Krippendorff's Alpha instruments while in Priori Coding, only used Fleiss's Kappa instrument. Those instruments were meant to check the reliability and validity of the codes established. The reasons for the different methods used for both data coding types are; in Emergent Coding, the agreement has to be assessed between two coders only all the instruments used are suitable for this purpose while in Priori Coding, the agreements needed to be assessed by all data coders at the same time, and the instrument used suitably served the purpose.

Based on the results of data coding, the Emergent Coding gave six (6) coders from total fifteen (15) coders that have the most promising agreement result achieved. While in Priori Coding, eight (8) coders from total twenty (20) coders have achieved the accepted agreement level result. Results from both emergent and priori coding have achieved a substantial level of Fleiss Kappa's agreement level (80% agreement; 0.61-0.99 for Fleiss's kappa). The following are the score tables shown the results of Priori and Emergent Coding.

Table 1.7: The Result of All Agreement of All Coders for Priori Coding

All Raters	Percent Agreement	Fleiss's Kappa	N Agreements	N Cases
	89 %	0.81	8	15

Table 1.8: The Result of All Agreement of All Coders for Emergent Coding

All Raters	Percent Agreement	Fleiss's Kappa	N Agreements	N Cases
	79%	0.71	6	15

5.9.3 Summary of Primary Research Findings

The findings of preliminary codes, initiated through interviews feedback data, then evaluated through data coding and assessed thoroughly via inter-coder reliability and validity checks, are sufficient to support the establishment of the key reviews dimensions set. Based on the results shown in the tables above, from both emergent and priori coding have presented a substantial level of agreements between coders. The results interpreted that the codes extracted are reliable, and the set of key important information dimension in customer reviews consists of User Experience, Value of Money, Product Quality, Customer Service and Recommendation. All these categories or key dimensions of information are generic yet distinctive, which has enabled people to differentiate the difference between the categories. These five key categories of information in customer reviews would be further used as the basis for the development of a prototype system in the next chapter.

Chapter 6
User Evaluation Phase 1

6.1 Introduction

This chapter presents the results and findings of the User Evaluation Phase 1, which meant for evaluating the 'Tags and Tagging' system concept. The chapter will be presented the process of setting up the evaluation from the beginning to its end process. Before that, this chapter will explain the relationship between the findings of data analysis materialised from the Primary Research and the system prototype design. Afterwards, the chapter continues with details of the development of the system prototype, the selection of framework used, then the validity and reliability checks on the evaluation tool, and lastly is the preparation of the evaluation setting; from the data collection to the result analysis. The results that will be demonstrated here later were indicating the early acceptance level of the Tags and Tagging system concept by the potential users. This evaluation meant to gather attitude data as to see what will be the attitude reactions of the respondents while being introduced to use the customer reviews system with Tags and Tagging concept for the first time. This User Evaluation Phase 1 is vital to give the study an early sign of acceptance towards the proposed new Tags and Tagging concept in customer reviews system for the actual future use. The summary of this chapter will conclude all the analysis made on the results from the system user evaluation.

6.2 The Relation between the Primary Research Findings and the System Prototype Features Development.

The Primary Research which was done in two-phased user studies, aimed at getting the types of information the online shoppers looked for when using the online customer reviews (in product-based commercial websites). The research had discovered the findings that pictured the online shoppers were looking for five (5) types of information when they used the online customer reviews in their online shopping activities.

Based on the data analysis of the Primary Research, the data formed a set of information dimensions or categories of reviews consisting of five (5) key elements. The five (5) key

dimensions generated are; User Experience, Value of Money, Product Quality, Customer Service and Recommendation. These five (5) key dimensions will be used in the system prototype design represented as the categories of the customer reviews. It also means they appeared as the features in the system prototype.

6.3 The Development of the Prototype System (Offline Version)

The system prototype is an offline system. It was coded using Python 3 interacted and aligned with MySQL as the database. The prototype system was established to present the five (5) categories of information in customer reviews for preliminary user evaluation. The following shows the list of figures illustrating the design of the interfaces of the prototype system where it displays the Home page contained the picture of the product, the five (5) Tags generated and the Write Review feature. This system prototype is called Customer Reviews Prototype or shortly known as CRP. From this section onwards, this prototype system will be referred to as CRP.

Figure 81 A Screenshot of the Home Page Prototype System
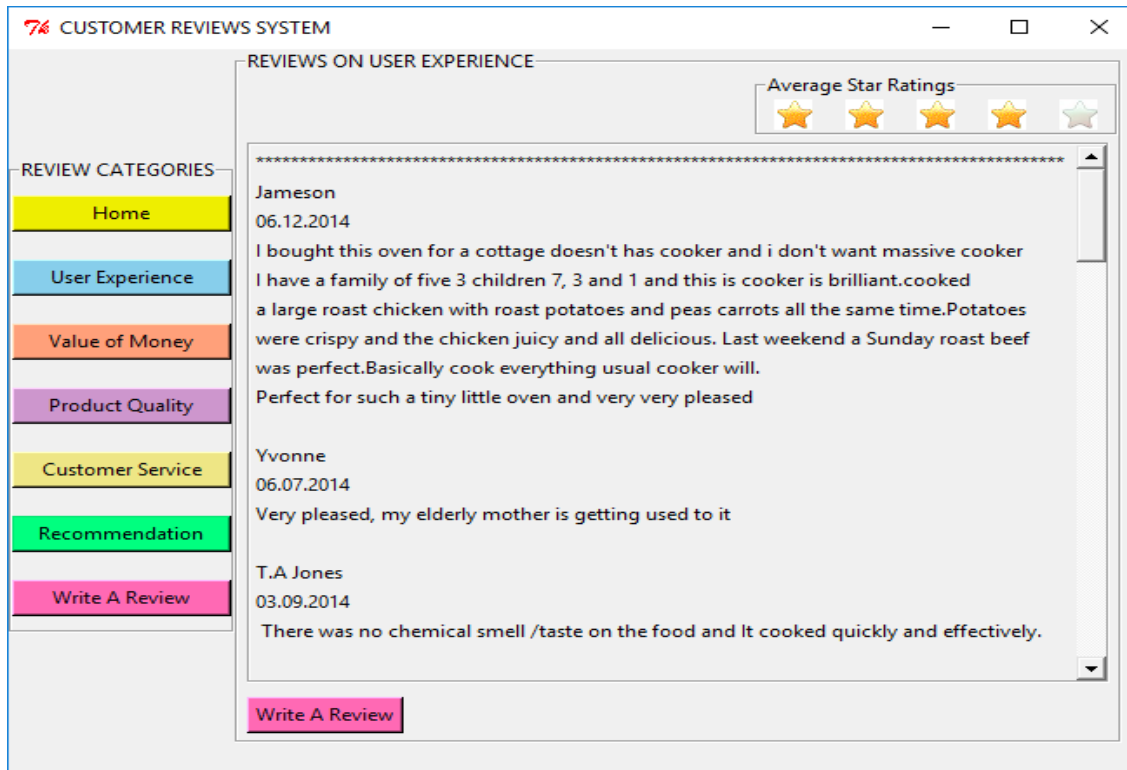
Figure 82 A Screenshot of the User Experience Page Prototype System
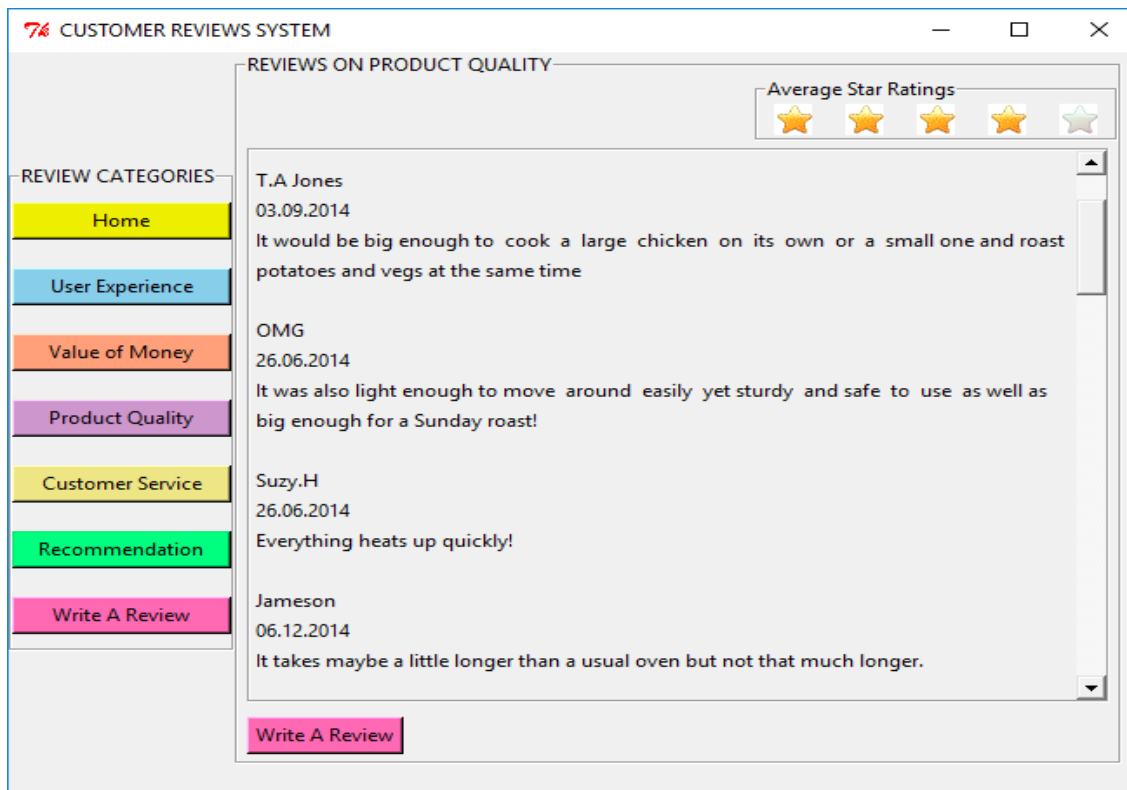
Figure 83 A Screenshot of the Product Quality Page Prototype System
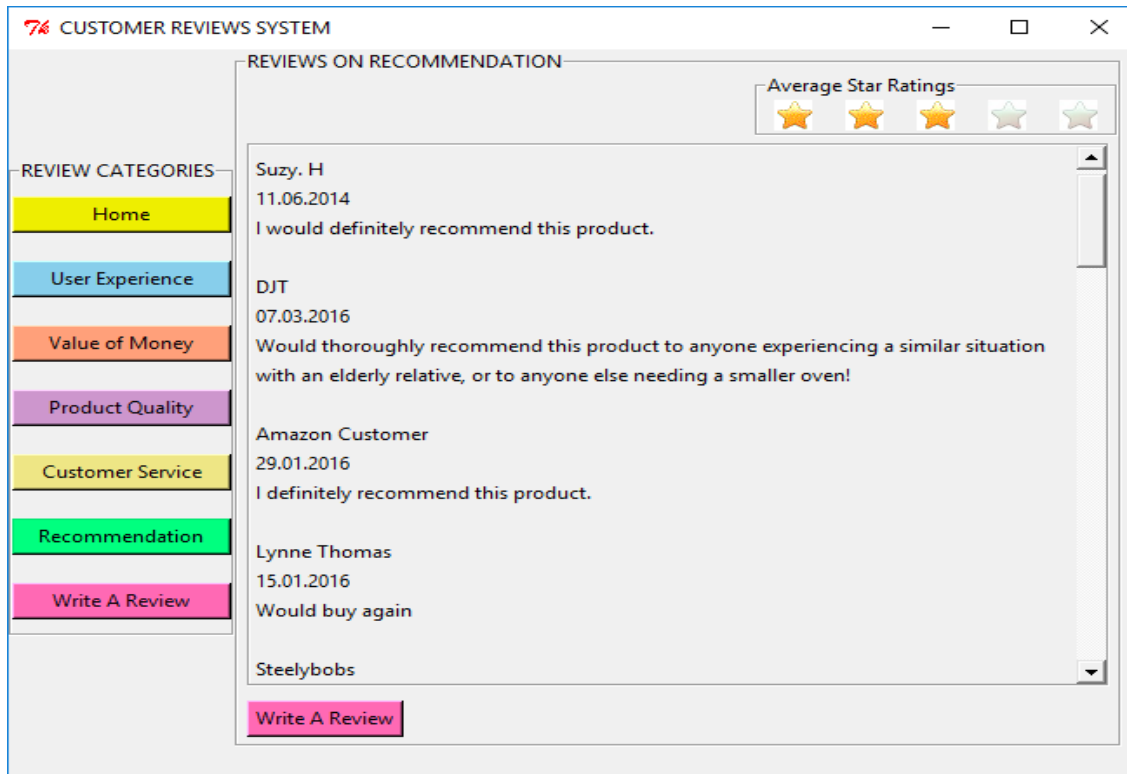
Figure 84 A Screenshot of the Recommendation Page Prototype System
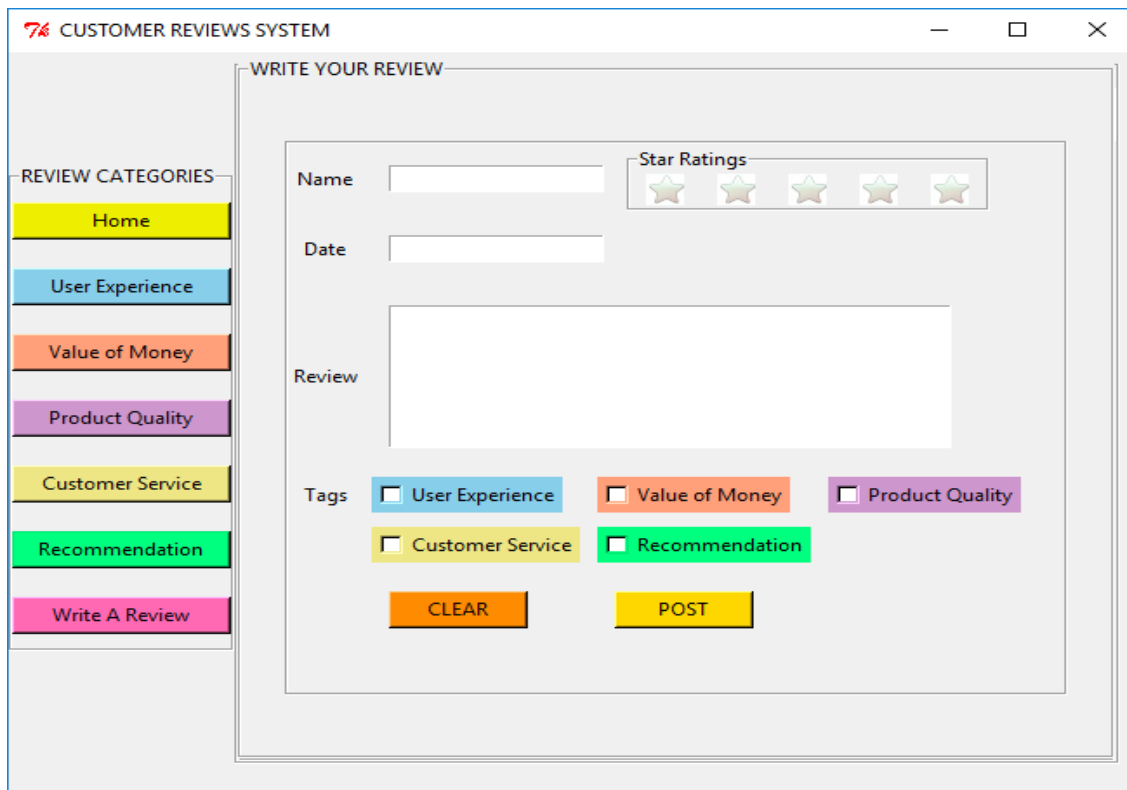
Figure 85 A Screenshot of the Write a Review Page Prototype System

6.4 Technology Acceptance Model (TAM) as the Evaluation Framework and Questionnaire Constructs

The Technology Acceptance Model or TAM, is a theory developed by Davis (1989) which is broadly accepted, used and referred. The theory classifies on any behavioural issues among people towards accepting a new technology (Legris *et al,*. 2003). Indeed TAM was initially a consequent from the TRA or the Theory of Reasoned Action (Fishbein and Ajzen 1975), but the TAM concentrates majorly in the information systems field while in the TRA, the focus was on the acts or human behaviours as a whole (Erkan 2014). In TAM, there are two primary constructs used. The constructs are the Perceived Usefulness and the Perceived Ease of Use. Both constructs used in assessing an attitude of individuals on accepting a newly introduced technology. Perceived usefulness is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" while Perceived Ease of Use is defined as "the degree to which a person believes that using a particular system would be free of effort" (Davis 1989).

Many researchers have employed TAM in their studies on various fields such as the internet (Porter and Donthu 2006), online banking (Yiu *et al,*. 2007), e-learning (Tarhini 2013), social media (Rauniar *et al,*. 2014) and e-government (Alanezi *et al,*. 2015). TAM has also been employed in the context of online customer reviews (Elwada *et al,*.2016; Ayeh, 2015). Despite its full acceptance and acknowledged importance to researchers, there were some criticisms received as well, especially regarding the limitation of TAM on explanatory power (Tarhini *et al,*. 2015). However, Elwada *et al*. (2016) highlights that employing TAM in online customer reviews studies brings direct attitude representation as the perceived usefulness assess as the degree to which a customer believes that using customer reviews systems enhances their online shopping experience whilst the perceived ease of use refers to the degree to which a customer believes that using customer reviews systems is simple and straight-forward. Hence, TAM is a reliable model that suggests the perceived usefulness and perceived ease of use are the main determinants of information adoption as well as system adoption.

6.5 Questionnaire Development and Conduct

The questionnaire was designed using the TAM as the framework where the main components of the model are taken; Perceived Ease of Use, Perceived Usefulness and another new construct

created and relevant to the first two key constructs TAM specifications; Satisfaction. The Satisfaction construct represents attitude of respondents toward the prototype. The Satisfaction construct merely designed to measure the level of satisfaction and how does it lead to the intention of future use. The Satisfaction construct represents Intention to Use (ITU) in TAM model.

There are sixteen (16) questions were developed in the questionnaire, which later will be evaluated and assessed on their reliability, validity and factorial analysis. The series of tests were made to ensure the questionnaire is validated to be used to measure the users' attitude acceptance level toward the Tags and Tagging concept proposed. Please refer to the list of appendices to find the questionnaire set for this User Evaluation Phase 1. The variables were being presented using the seven-point (7) Likert Scale. Refer appendices for the questionnaire.

This User Evaluation Phase 1 was conducted via a questionnaire in the Google Form platform. The invitation to participate in the questionnaire was sent via emails, and the responses were also saved and recorded online. There is a video demonstration attached to the questionnaire to allow the participants to watch the demonstration of how the system prototype being used and how the Tags and Tagging concept works. Each respondent took an average of 5-10 minutes of response time.

The demonstration video was recorded and uploaded on YouTube, then embedded in the questionnaire. Before presenting the result, the following headings reported the assessment made on the questionnaire for validation purpose. The remaining section will be followed by an initial examination of data, the descriptive statistics reports, reliability and validity checks, Kaiser-Meyer-Olkin (KMO) and also Bartlett's Test of Sphericity.

6.5.1 Reliability Assessment

Table 2.3: The Result of Reliability Test

Reliability Statistics	
Cronbach's Alpha	N of Items
.961	16

Based on the table of the result, it indicated that the questionnaire is reliable where it scores 0.961, about a minimum of 0.6. Therefore, the designed questionnaire can be used for the evaluation.

6.5.2 The KMO and Bartlett's Test of Sphericity

Table 2.4: The Result of KMO and Bartlett's Test of Sphericity

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.933
Bartlett's Test of Sphericity	Approx. Chi-Square	1648.177
	df	66
	Sig.	.000

Based on the table of result from the KMO and Bartlett's Test of Sphericity, it indicated that the questionnaire has an adequate sampling size used for the questionnaire due to its score of 0.933. Thus, the result of the questionnaire from 171 respondents is valid and adequate.

6.5.3 Suitability of Statistical Measures on Data Types

The following embed a table that shows the scales of statistical tests that are suitable according to the types of data. There are two types of data used; Nominal Data and Ordinal Data. Nominal data consists of demographic aspects of the respondents. The ordinal data represented by the answers or results of responses towards the TAM based questions, measured using 7 Likert Scale. However, the combination of all nominal data variables into one variable has become an Interval Data. Interval Data is important to define the mean or average of the total score of respondents in this survey. Based on the figure below, the results were suitably measured its frequency (nominal data), and/or median (ordinal) and mean (interval).

Provides:	Nominal	Ordinal	Interval	Ratio
The "order" of values is known		✔	✔	✔
"Counts," aka "Frequency of Distribution"	✔	✔	✔	✔
Mode	✔	✔	✔	✔
Median		✔	✔	✔
Mean			✔	✔
Can quantify the difference between each value			✔	✔
Can add or subtract values			✔	✔
Can multiple and divide values				✔
Has "true zero"				✔

Summary of data types and scale measures

Figure 63: Table of Data Type and Suitable Scale Measures

6.5.4 Validity Assessments

The factor analysis was done to validate the factors loading of the questions. This is called Construct Validity Assessment. Based on the results shown in Table 2.6, it indicated that the factors were loaded according to their categories; Perceived Useful, Perceived Usefulness and Satisfaction. The factor analysis was assessed by analysing 16 scale items (6 items on Perceived Usefulness, six items on Perceived Ease of Use and four items on Satisfaction).

From the table result below, it shows that all factor loadings observed to be greater > 0.5 hence, indicating that practical significant weighed loadings of all the three (3) factors constructed.

244

Table 2.6: The Result of Factor Analysis

Structure Matrix			
	Component		
	1	2	3
Usefulness1	.586	.856	.314
Usefulness2	.563	.688	.238
Usefulness3	.439	.917	.449
Usefulness4	.299	.701	.447
Usefulness5	.529	.812	.577
Usefulness6	.412	.798	.451
Ease of Use1	.952	.559	.507
Ease of Use2	.938	.495	.575
Ease of Use3	.931	.472	.476
Ease of Use4	.947	.447	.456
Ease of Use5	.884	.485	.694
Ease of Use6	.808	.527	.539
Satisfaction1	.408	.544	.925
Satisfaction2	.695	.375	.876
Satisfaction3	.639	.328	.871
Satisfaction4	.507	.611	.915
Extraction Method: Principal Component Analysis (PCA) Rotation Method: Oblique Rotation			

Next is the result of Convergent Validity Assessments. The convergent validity assessments were used to measure. The convergent validity used to measure whether predicted items measuring a factor only load well into that factor; not outside its parent factor. Hence, the items also must have low loadings outside its parent factor. Based on the result from Factor Analysis, three (3) Factors constructed;

- Factor 1 – Perceived Ease of Use
- Factor 2 – Perceived Usefulness
- Factor 3 – Satisfaction

Table 2.7: The Result of Convergent Validity Factor 1.

	Component		
	1	2	3
Ease of Use4	.995	-.029	-.062
Ease of Use3	.944	.009	-.033
Ease of Use1	.912	.111	-.032
Ease of Use2	.883	-.001	.103
Ease of Use5	.730	-.032	.319
Ease of Use6	.680	.129	.116

Convergent validity is established when;

Factor loadings in highlighted box shown above are greater than 0.5 (> 0.5) WITH cross-loadings less than 0.32 (> 0.32). All items in Factor 1, Ease of Use Factor show factor loadings in the range between 0.680 to 0.995 which means, greater than 0.5 with respective cross-loadings in the range between -0.001 to 0.319 which means less than 0.320.

Table 2.8: The Result of Convergent Validity Factor 1.

	Component		
	1	**2**	**3**
Usefulness3	-.056	.920	.054
Usefulness1	.291	.807	-.213
Usefulness6	-.039	.762	.121
Usefulness4	-.164	.683	.220
Usefulness5	.064	.672	.233
Usefulness2	.318	.605	-.250

Factor loadings in highlighted box shown above are greater than 0.5 (> 0.5) WITH cross-loadings less than 0.32 (> 0.32). All items in Factor 2, Usefulness Factor show factor loadings in the range between 0.605 to 0.920 which means, greater than 0.5 with respective cross-loadings in the range between -0.039 to 0.318 which means less than 0.320.

Table 2.9: The Result of Convergent Validity Factor 3.

	Component		
	1	**2**	**3**
Satisfaction1	-.199	.215	.932
Satisfaction4	-.071	.264	.831
Satisfaction3	.316	-.199	.794
Satisfaction2	.317	-.162	.749

Factor loadings in highlighted box shown above are greater than 0.5 (> 0.5) WITH cross-loadings less than 0.32 (> 0.32). All items in Factor 3, Satisfaction Factor show factor loadings in the range between 0.749 to 0.932 which means, greater than 0.5 with respective cross-loadings in the range between -0.071 to 0.317 which means less than 0.320.

6.6 Sampling Technique

The sampling method technique used in the User Evaluation Phase 1: Survey is probability convenient sampling method. The rationale for choosing this method was due to the condition of this study to reach the respondents. Whoever that is achievable and accessible (at the easiest) by the questionnaire is considered as the potential respondents. Within the time constraint, this technique is the most suitable for employment to get quick and better response. The probability technique is commonly used because the procedures to acquire the sample unit is random, easier, quicker and cheaper (Etikan et al,. 2016). This user evaluation survey aims to measure the level of acceptance towards the new concept proposed in the online customer review system prototype. Since online customer reviews are known to be used in public setting and online environment, by many and at large, the settings have justified the purpose of this questionnaire to be reached randomly. As the link of invitation to participate was put up on the researcher's social media accounts, only the party of interest would respond.

That means, whoever responded probably have the intention to see and evaluate how the new concept of the customer review system is. From there, the probability that the prospect respondents are online shoppers or not, has existed. Therefore, probability setting is found to be the most suitable approach to describe the prospect respondents. There are many TAM based studies that also found to have used this type of sampling technique (Weng et al,. 2018) Therefore, other than the condition of study, the factor of similarity and commonality of other studies using the same questionnaire framework; TAM, had also led to the adoption of probability convenience sampling.

6.7 Pilot Study and Ethical Clearance

Conducting a pilot study was very important to pre-determine the suitability and adaptability of a method, framework, scale measure and sampling technique used in this User Evaluation 1. Thus, twenty-five (25) respondents received during the first launch of the questionnaire invitation aired

on the researcher's social media pages. For the pilot study, the survey used 5 Likert scale measure, probability convenient sampling technique and TAM framework constructs. Based on the results gathered, the Cronbach Alpha test was applied to measure the reliability of survey result. However, the reliability test resulted in the score of lower than the minimum accepted level; 0.60. Thus, the 5 Likert Scale is not suitable for adoption. The reliability result has changed the scale measure use from 5 Likert Scale to the 7 Likert Scale. Another round of pilot study was conducted and gathered twenty-five (25) respondents as well. Then, the reliability test was measure again and this time, the survey result scored 0.96 which is more than 0.60 the minimum level. That indicated the 7 Likert Scale was found suitable to be used to measure the acceptance level of the prototype system. Henceforth, the survey was ready for the official launch.

The ethical clearance was attached together with the survey question set in order to ensure the respondents have voluntarily participated. The ethical clearance was also meant to inform the respondents that their responses were merely significant to the topic of research and will not be used for other purposes out of the survey's interest. Besides, the data confidentiality was assured by an awareness made to the respondents that there was no obligation to participate and they were allowed to withdraw at any point when needed.

6.8 Statistical Results, Analysis and Hypotheses Testing

This section will present the results of the survey explained thoroughly in the previous chapter. As mentioned earlier, this study has employed Technology Acceptance Method (TAM) technique to measure the level of acceptance on attitude level from the prospective users towards the Tags and Tagging concept introduced on posting and retrieving information from customer reviews. The data collected is analysed using SPSS.

I. Respondents Demographics

The following details will discuss further on the respondents' background or demographic aspects.

a) Gender
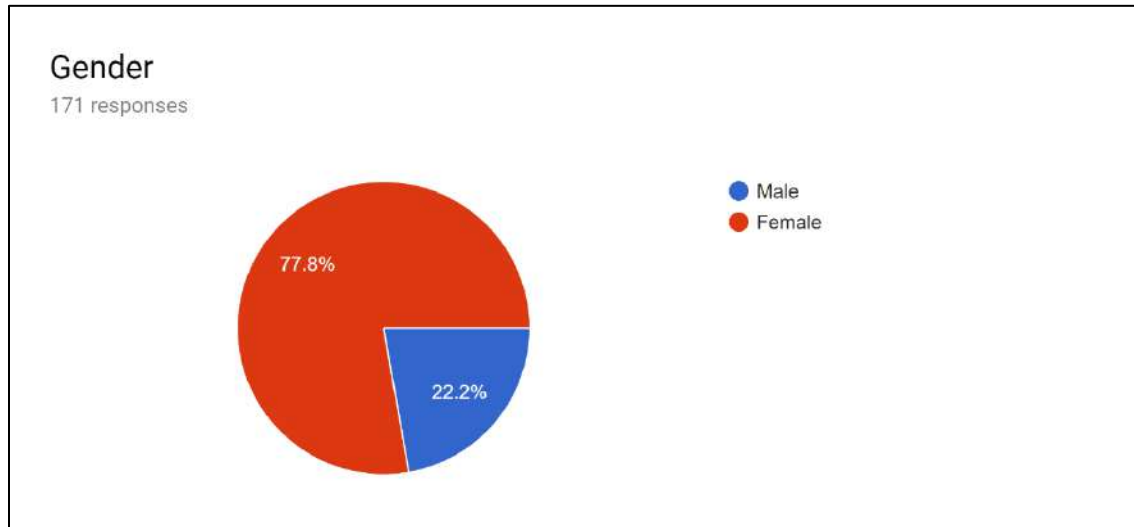
Figure 86: The result of respondents' gender

The graph above shows that the majority of the participants are female, with 77.8% while the male is 22.2%. The result is indicating that female respondents were voluntarily more responsive as compared to male respondents. Also, the result also shows that the level of interest toward viewing and evaluating the new concept of online customer reviews is high among the female respondents.

b) Age

Based on Table XX above, the majority of respondents are in the age range between 28 to 32 with 46.2% cumulatively. The minimum age of the respondents is 18 years old and the maximum age is 59 years old. There are one hundred and seventy-one (171) of total respondents.

Table 3.0 : The age of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
			Age		
Valid	18	1	.6	.6	.6
	20	1	.6	.6	1.2
	21	6	3.5	3.5	4.7
	22	15	8.8	8.8	13.5
	23	16	9.4	9.4	22.8
	24	6	3.5	3.5	26.3
	25	6	3.5	3.5	29.8
	26	7	4.1	4.1	33.9
	27	2	1.2	1.2	35.1
	28	25	14.6	14.6	49.7
	29	4	2.3	2.3	52.0
	30	12	7.0	7.0	59.1
	31	22	12.9	12.9	71.9
	32	16	9.4	9.4	81.3
	33	7	4.1	4.1	85.4
	34	5	2.9	2.9	88.3
	35	2	1.2	1.2	89.5
	36	4	2.3	2.3	91.8
	37	3	1.8	1.8	93.6
	38	2	1.2	1.2	94.7
	40	2	1.2	1.2	95.9
	41	4	2.3	2.3	98.2
	45	1	.6	.6	98.8
	52	1	.6	.6	99.4
	59	1	.6	.6	100.0
	Total	171	100.0	100.0	

c) Status of online shopping
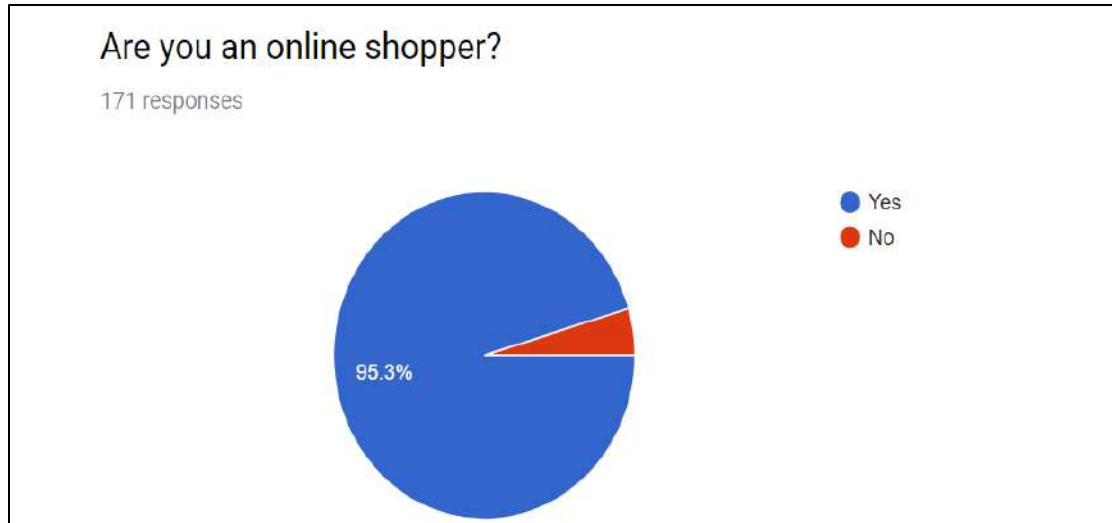
Figure 87: The result of online shopping status of respondents.

The graph above shows that majority of the respondents are an online shopper with 95.3% response while the non-online shopper recorded 0.07%. This indicated that the results of this survey regarding the use of CRP also came from the view of non-online shoppers.

d) Status of online shopping regularity
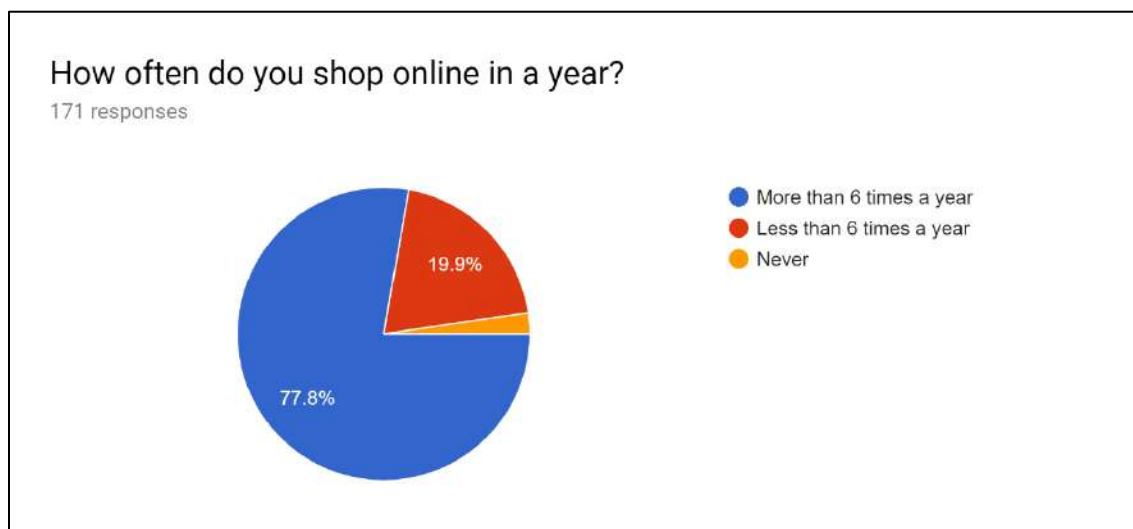
Figure 88: The result of online shopping status of respondents.

The respondents who shop online more than 6 times a year is 77.8% while 19.9% claimed that they shop online less than 6 times a year.

There was another type of respondents which is the ones that never shop online. The link to the invitation to this survey was put up on the researcher's social media channels.

Therefore, there was a probability of getting respondents from non-online shoppers due to the background of acquaintances in the researcher's friends zone. Besides, the result also shows that from 95.3% of the online shoppers, 77.8% of them are regular shopper as they shop more than 6 times a year.

e) Status of customer reviews' use

Figure 89: The result of using customer reviews' status

The result of the respondents' background regarding their preferences of using customer review in online shopping activity resembled the pattern result of the previous question; status of online shopping and regularity of shopping online. From the 95.3% of the respondents who shop online, and 77.8% who shop regularly, 73.7% used customer reviews when engaging in online shopping activity while 26.3% from the proportion were using customer reviews sometimes. This result indicated that the next results regarding the use of the new concept customer reviews prototype are based on the evaluations of majority customer reviews users and the minority of non-user.

II. Quantitative Result Analysis

There are three (3) main constructs of TAM with respective results of frequency as elaborated in the following;

1) TAM: Useful Constructs
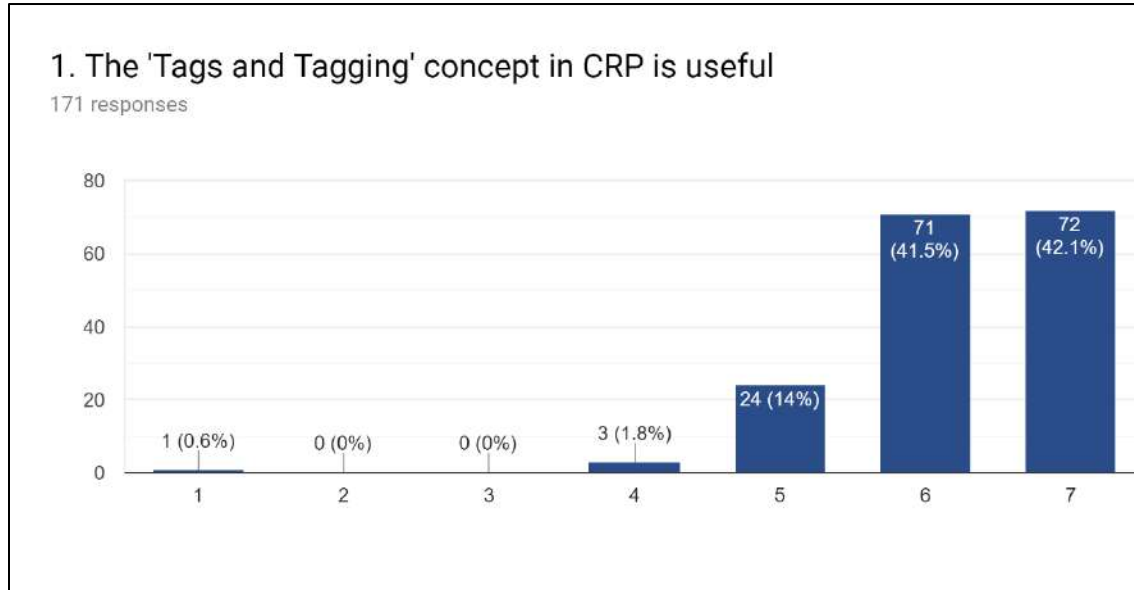
Figure 90 The result of the Tags and Tagging concept is useful

The result in the figure above shows that 41.5% respondents agree and 42.1% respondents strongly agree that the concept of Tags and Tagging approach in customer reviews system is useful. Therefore, it shows that the concept is seemed as useful as cumulatively, the respondents that agree on this is 83.6% which already indicated the majority of the respondents. Besides, the result also indicated that there is a perceived good acceptance of Tags and Tagging concept among real users out there due to high score of 'Agree' given by the respondents.
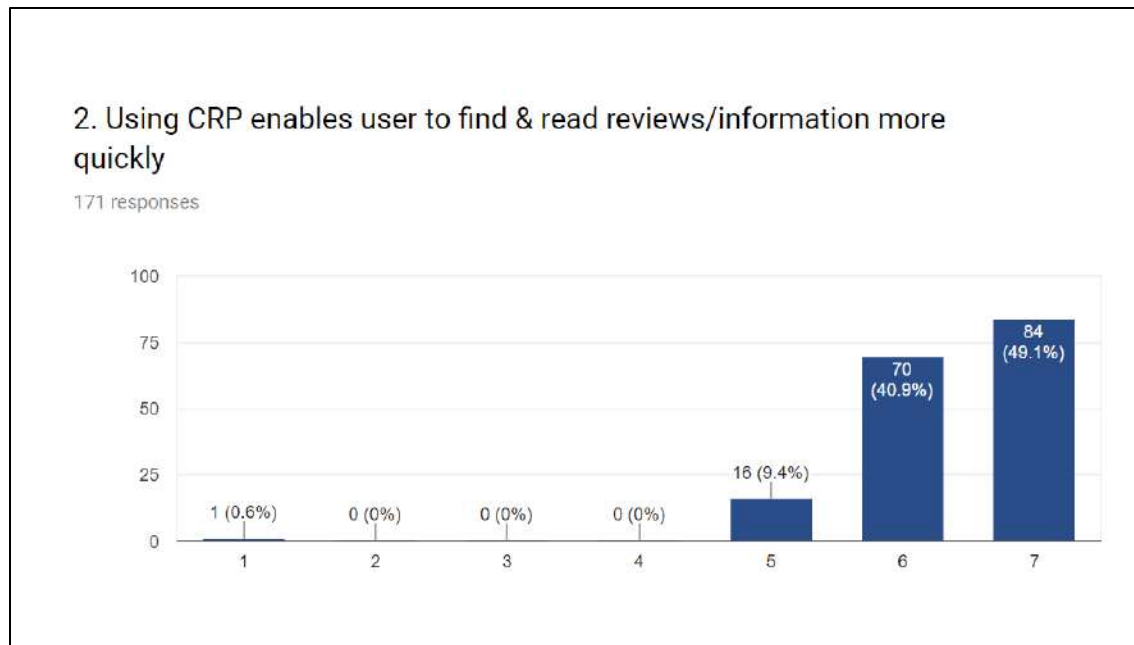
Figure 91 The result of CRP enabled the user to find information quickly

The result in the figure above shows that 49.1% respondents strongly agree and 40.9% agree that using the prototype customer reviews system with Tags and Tagging concept has seen and perceived useful for the user to find and read reviews more quickly as compared. This result indicated that respondents agreed that there is a need for users to quickly find and read reviews. When the time taken to read reviews is minimised, the users would feel satisfied as it will save their time in finding and reading reviews.
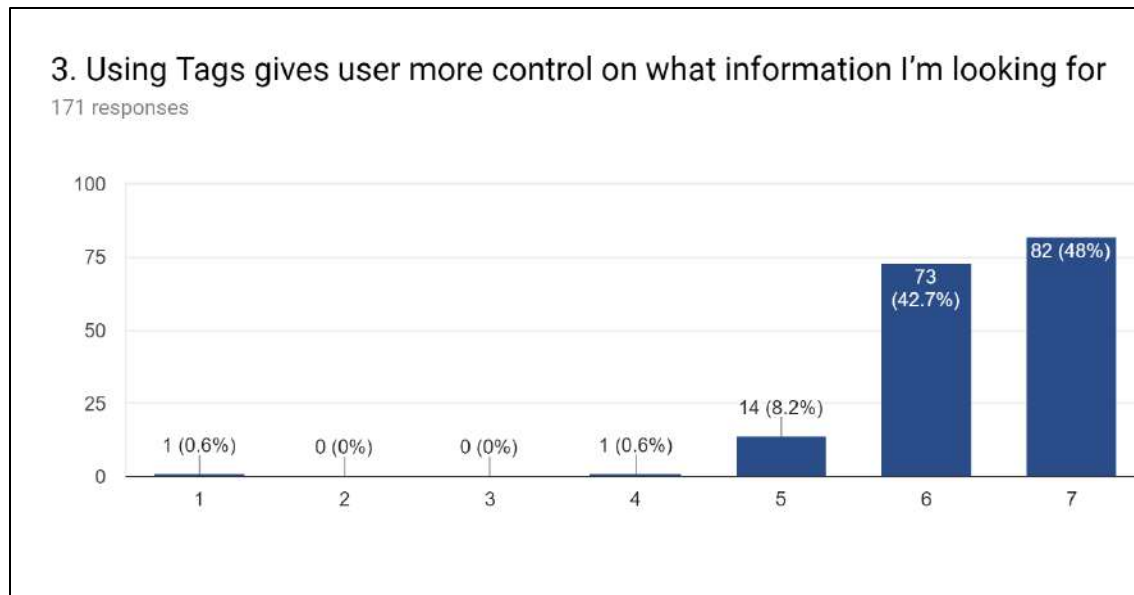
Figure 92 The result of tags gives control of what information needed

The result in the figure above shows that 48% of respondents strongly agree and 42.7% agree that using tags will give users more control over what kind of information they wanted or looking for. Based on this result, it indicated that there is a need for users to have control over the information they look for because different user has different preferences of information needs, and as evidently supported by the analysis output from the Primary Research. Therefore, by having the Tags and Tagging concept, it was perceived as capable of providing control of information search among users.
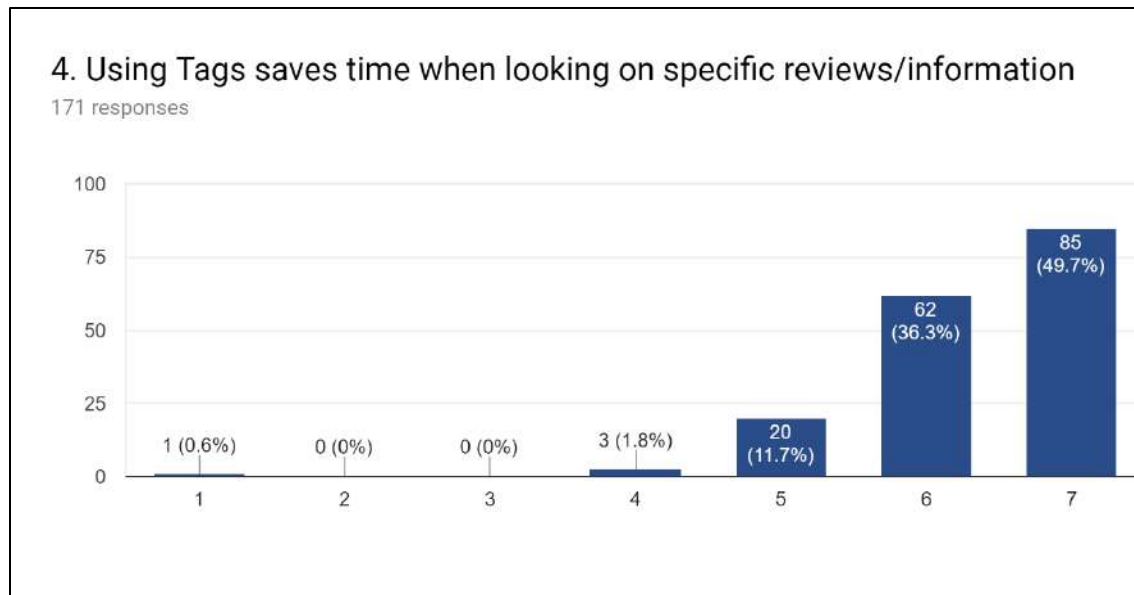
Figure 93 The result of using tags saves time

The result in the figure above shows that 49.7% of respondents are strongly agreeing and 36.3% agree that using Tags will save their time on finding relevant and specific information from reviews. Based on the result, in a way it has supported the result of question 2 which was also about time. From here, we can see that users value time preciously and therefore, anything that could help them in saving their times are very much appreciated. The result itself indicated a quite significant result where the percentage of respondents who strongly agreed is higher than respondents who voted agree only. That means, it is strongly important for a system to provide features that can save more of the users' time especially in regards to finding specific reviews or information required.
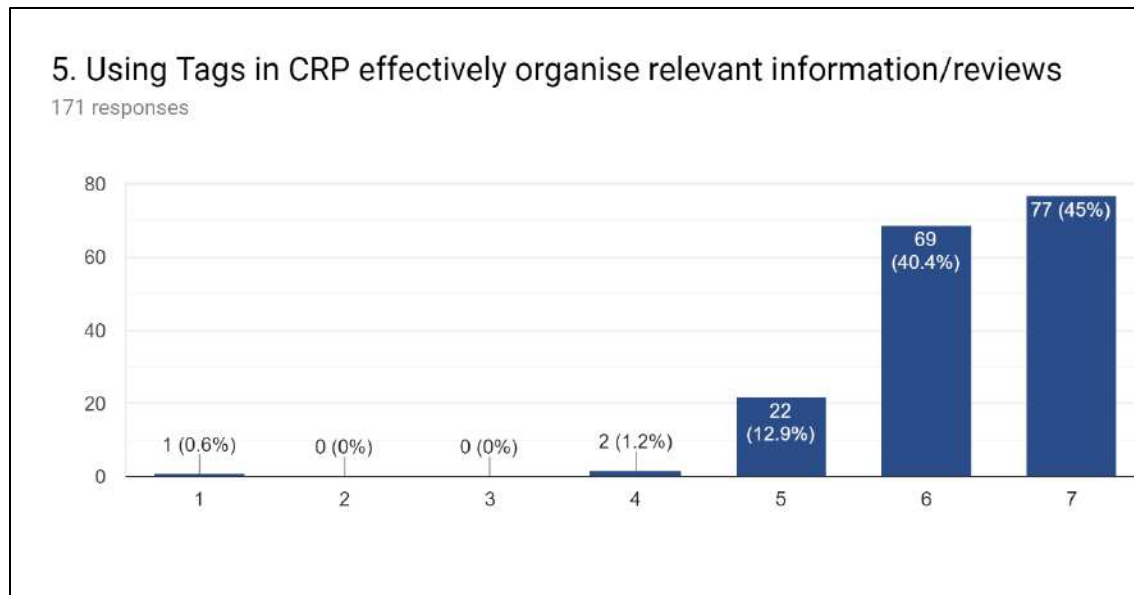
Figure 94 Result of The CRP effectively organised reviews

The result in the figure above shows that 45% of the respondents strongly agree and 40.4% agree that using CRP has effectively organised relevant information or reviews to the users. The result indicated that users mostly agree that using Tags in the CRP system has organised relevant information effectively. Effective review organisation in the context of this study refers to how can the users find the right reviews or information. The result of question 5 supports the result of question 4 as when the specific information can be reached easily and quickly by the users, that indicated that the specific and relevant information had been organised effectively. The effective organisation using tags make the user can save time in finding the specific and relevant information in customer reviews.
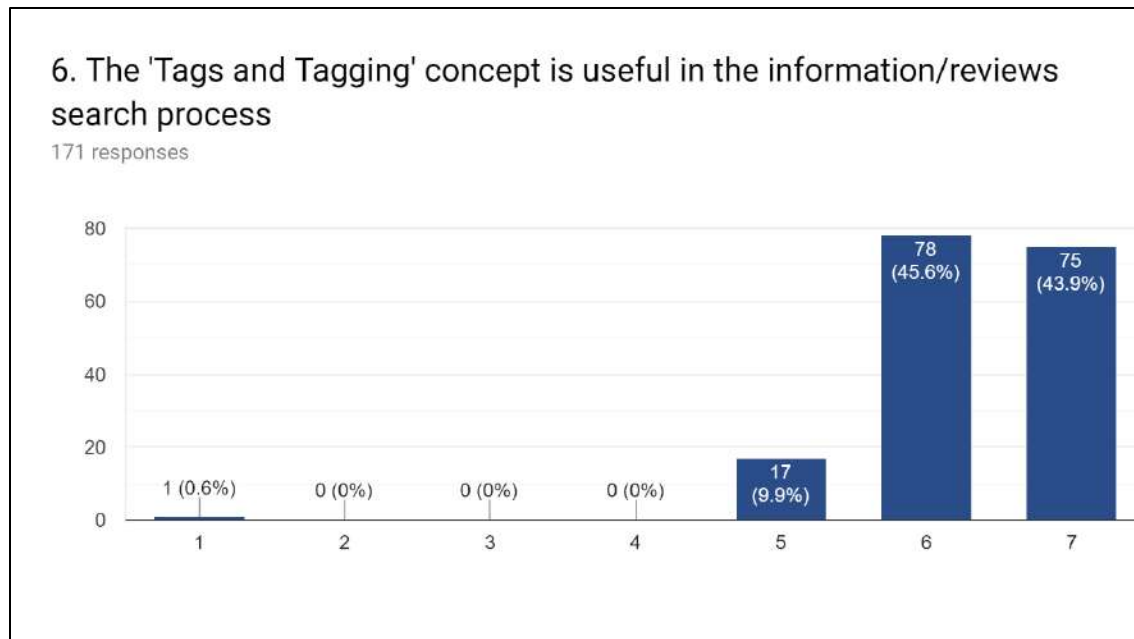
Figure 95 The result of Tags and Tagging is useful in the review search process

The result in the figure above shows that 45.6% respondents agree and 43.9% respondents strongly agree that Tags and Tagging concept is useful in the information search process. The agree votes were from the majority of the respondents and this result indicated that when users engage in information search process about products such as testimonials from other users, using Tags and Tagging concept is perceived useful as it effectively organised specific and relevant information, saves time for the user to find information according to their preferences so they could find it quickly and it gives more control to the users on what information they wanted to find.

2) TAM: Ease of Use Constructs
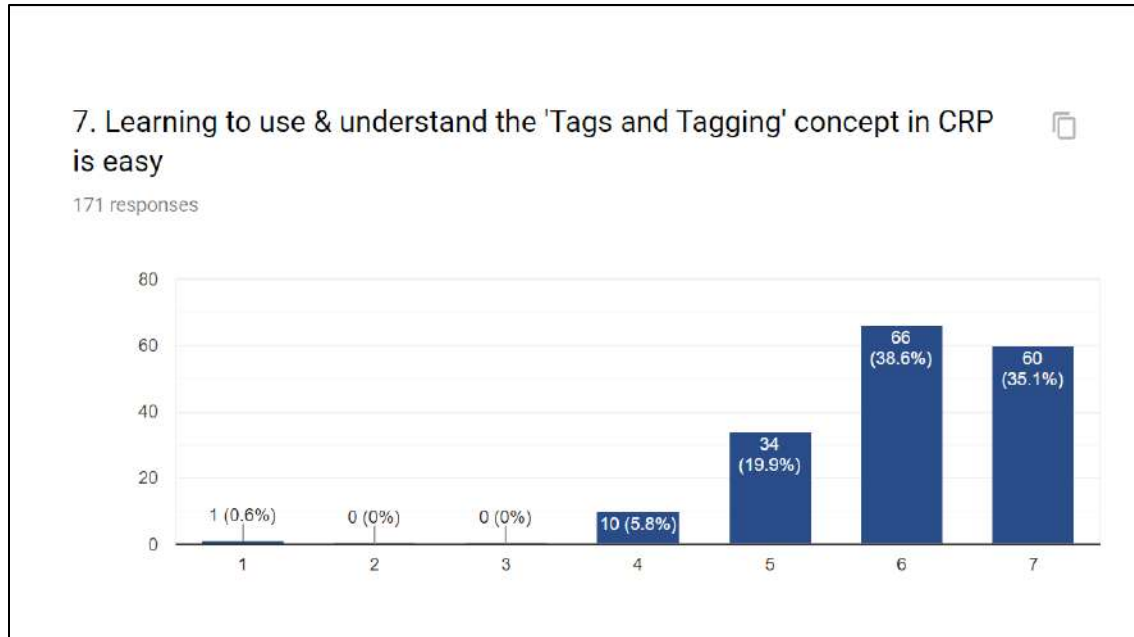
Figure 96 The result of Tags and Tagging are easy to use.

The result in the figure above shows that 38.6% of respondents agree and 35.1% strongly agree that learning to use the Tags and Tagging concept in CRP is easy. Based on observation, during the Useful construct survey questions, the results indicated high scores above 40% in most of the questions. However, when it comes to the Ease of Use construct, the scores reported slightly lower. However, the result still maintaining that majority of 74.7% of the total respondents still on agree range of scores. Even though the result also distributed quite a number of participants
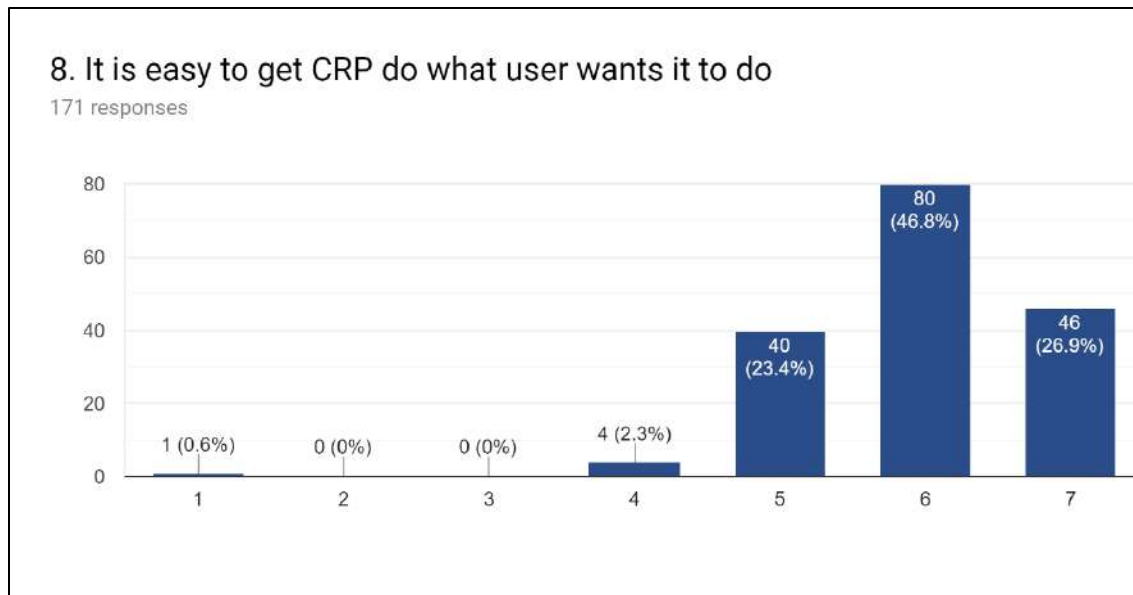
Figure 97 The result of CRP enabled the user to get what they wanted the system to do

The result in the figure above shows that using CRP system is perceived as easy to get the system works according to how the user wants it where 46.8% of the respondents agree and 26.9% strongly agree to the idea. From this result, we can indicate that the CRP system is somehow can be tailored to what the users' preferences and needs. Also, it is perceived as easy to perform the customisation. Again, the portion of 'somewhat agrees' vote has increased from the previous question by 3.5%. However, the portion is still in the range of agree scale and thus, majority are on agree range vote. Starting from this question, the result begins to report the percentage figure of more than 40%.
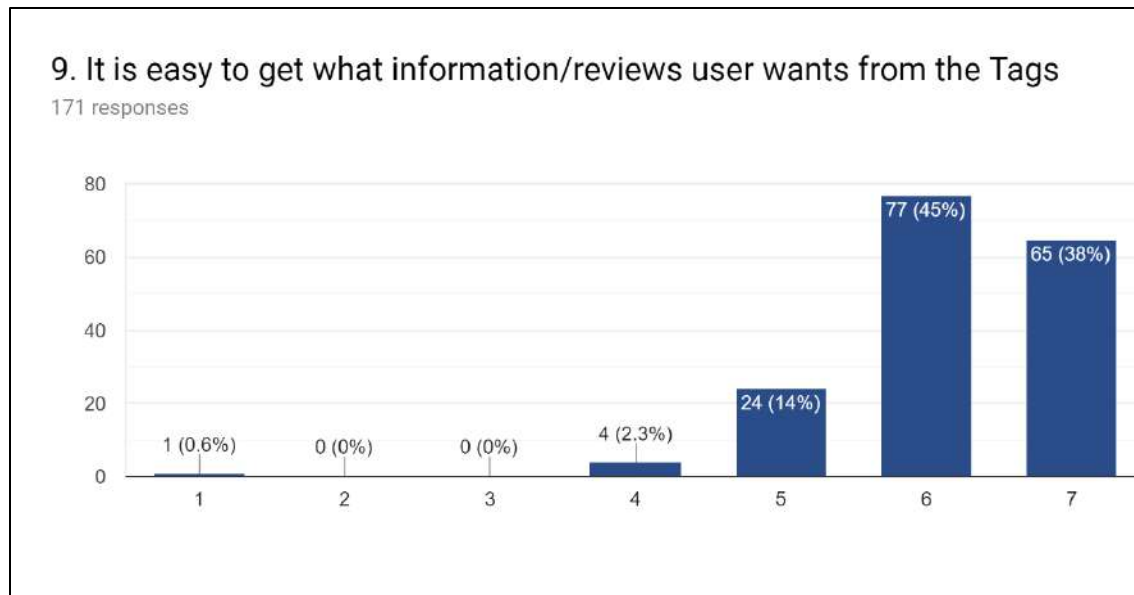
Figure 98 The result of Tags make user easy to find information

The result in the figure above shows 45% of respondents agree and 38% strongly agree that it is easy to get desired information when using Tags. From this result, majority of the respondents perceived that it is easy to get information or reviews that contained topic of concern of interest as they can choose from the Tags that represent the categories of reviews or information. There are five (5) tags or categories namely User Experience, Product Quality, Value for Money, Customer Service and Recommendation. Thus, the users have options on choosing which category of information that they interested and concern
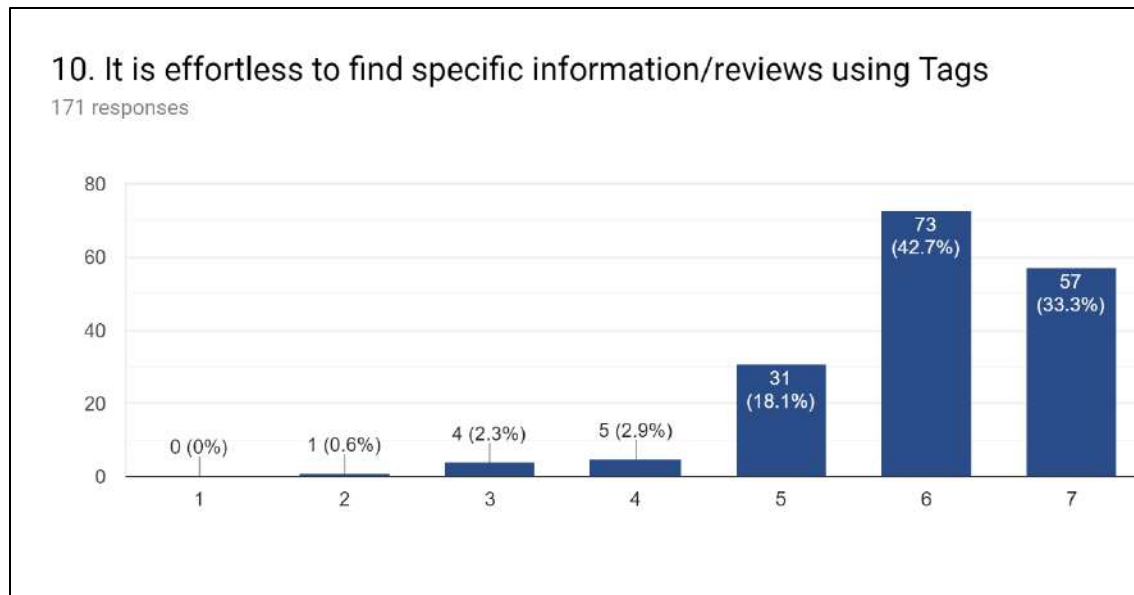
Figure 99 The result of Using Tags is effortless

The result in the figure above shows that 42.7% of respondents agree and 33.3% strongly agree and that makes cumulatively 76% of total respondents who were on the strongly agree range. The majority agree that CRP is perceived as not requiring much effort on finding information or reviews using Tags. From this result the study found that it is important to concern and ensure the users' feeling convenient to find information because the respondents strongly agree that effortless process is a good idea.
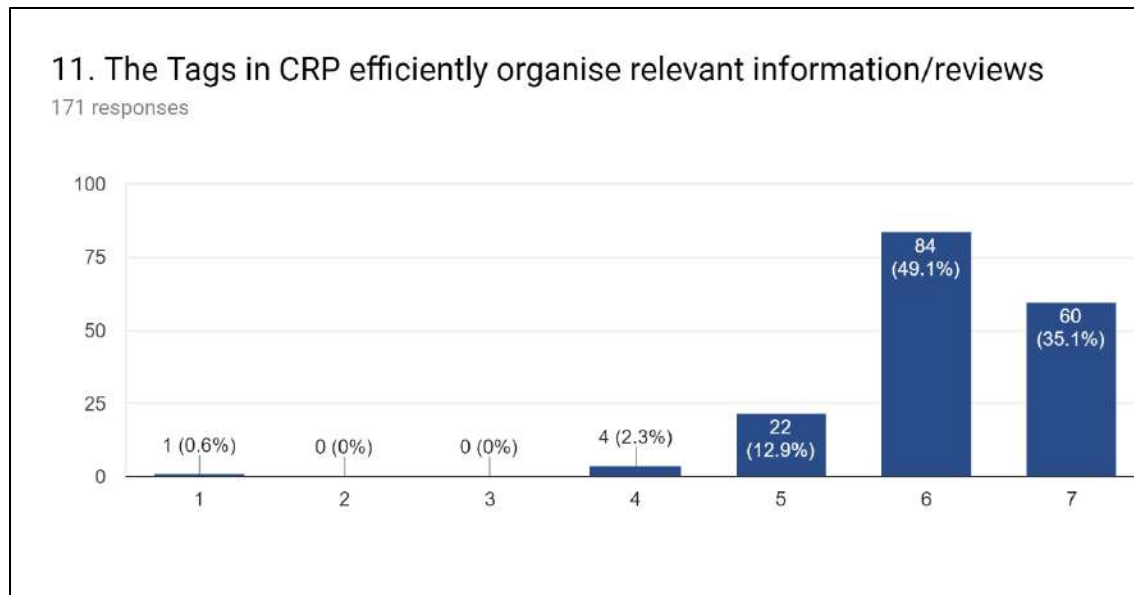
Figure 100 The result of CRP organised reviews efficiently

The result in the figure above shows that 49.1% of respondents agree and 35.1% strongly agree that Tags in CRP efficiently organise relevant information or reviews. In question 5 of the questionnaire, the concern was about the effective organisation of review, but in this question, the concern is on efficient organisation of reviews. The result above shows that majority of the respondents agree that Tags in CRP system is perceived as efficiently organised the relevant information or reviews. Efficient organisation of reviews in the study context means how the users can get the desired information right. Also, the result has supported the result of question 5 as this study found that the Tags in CRP system has effectively organised relevant information and reviews. Thus, this user evaluation found that Tags in CRP system has effectively and efficiently organised the reviews and information.
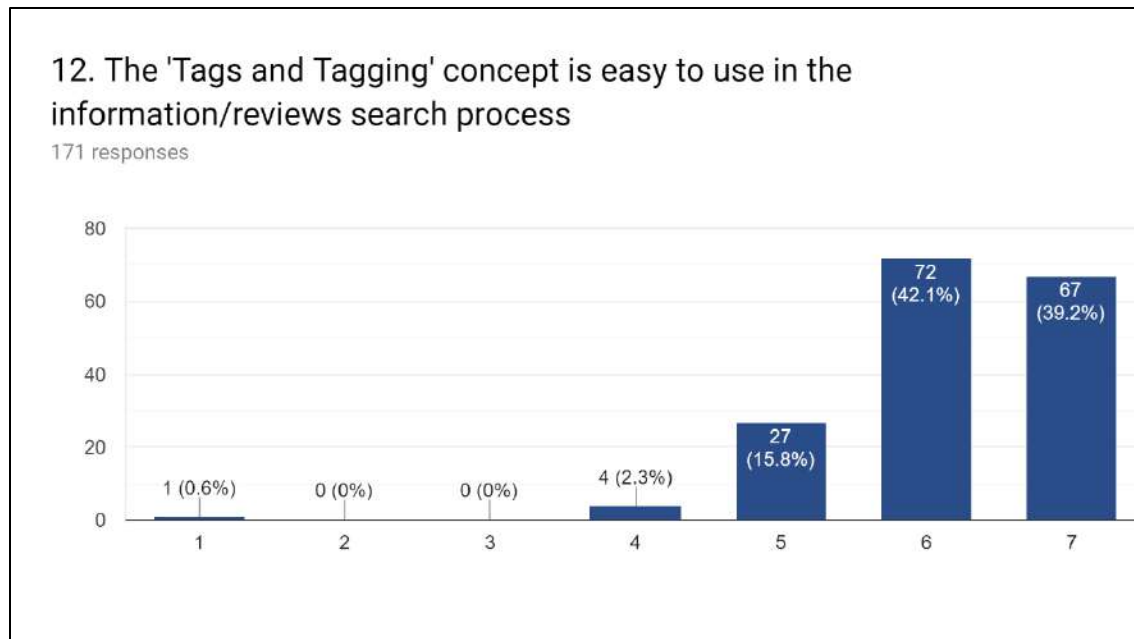
Figure 101 The result of Tags and Tagging is easy to use in the information search process

The result in the figure above shows that 42.1% of respondents agree and 39.2% strongly agree that the Tags and Tagging concept is easy to use for the information search process. The results of all questions in Easy to Use constructs indicated high score of agree votes reflecting that learning to use Tags and Tagging in CRP system is easy to learn, easy to customise and make it work according to the preferences of users (for example presenting reviews based on what tags are chosen by the users), effortlessly easy to find specific information and also help users to easily find the information they wanted due to efficient organisation of reviews using Tags.

3)TAM Construct: Satisfaction (Intention to Use)
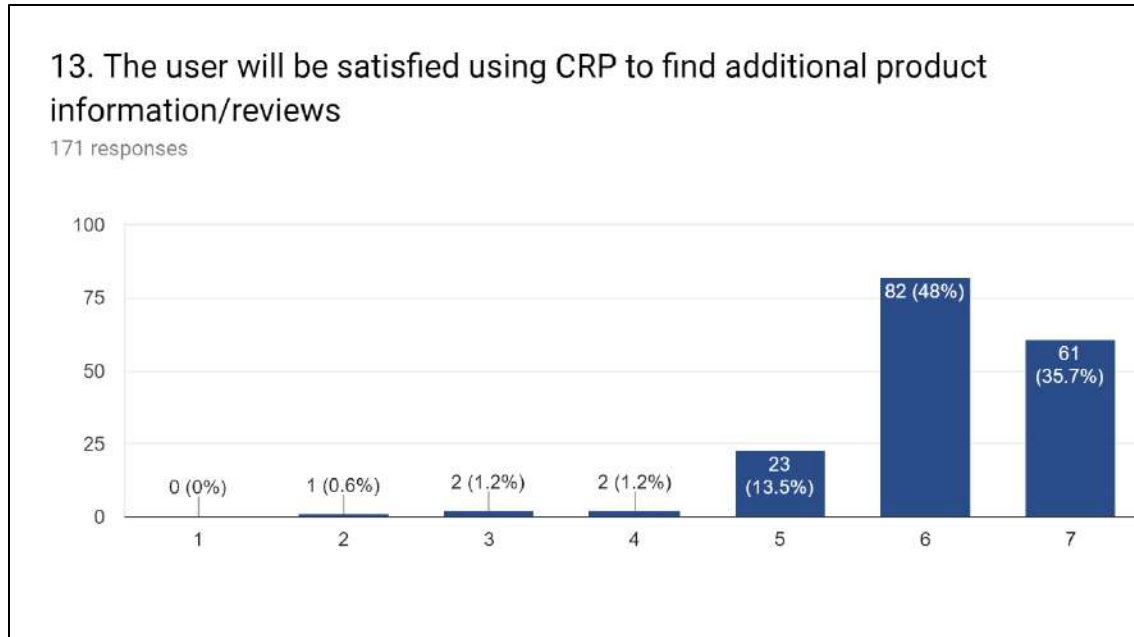
Figure 102 The result of Satisfaction of respondents on using CRP

The result in the figure above shows that 48% of respondents agree and 35.7% strongly agree that they feel satisfied using the CRP system to find additional product information through customer reviews. This result reflected the high majority of votes from the respondents regarding the CRP system. According to most of the respondents, they perceived that CRP system is useful and easy to use hence the high scores of satisfaction level. From this result, the study found that it is important to keep the consumers or user feel satisfied when engaging in information search process through reviews. It is because by the known state of customer reviews which usually lengthy and require tedious search process, it is hard to make the users feel satisfied when digging into information they desired to know. But in this user evaluation, when the respondents indicated positive feedback which is satisfied with the idea of using CRP from the perspective of its functions, it has given a promising preliminary acceptance of the Tags and Tagging concept proposed in CPR.
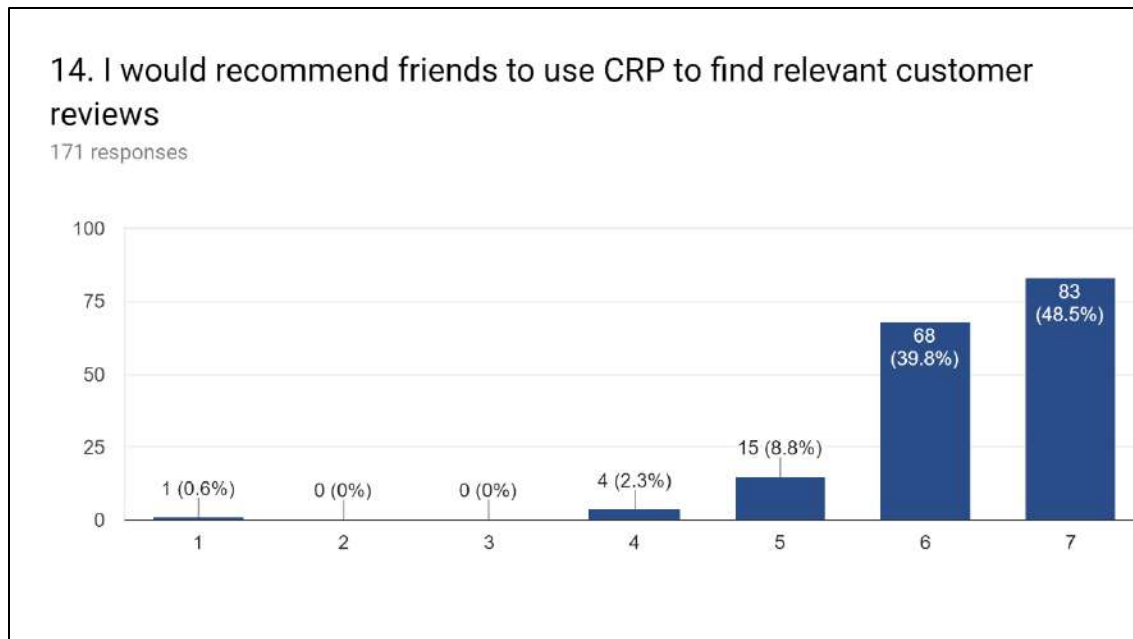
Figure 103 The result of Recommending friends to use CRP

The result in the figure above shows that 48.5% strongly agree and 39.8% agree that the respondents would suggest the CRP system to their friends to find relevant customer reviews. The result indicated that the CRP system has successfully convinced the respondents in terms of the perceived usefulness and easiness factors in using the system. Besides, the votes for recommendation is also reflected a good acceptance of the users despite the attitude evaluation measured. More importantly, the CRP system also has convinced the respondents that other users probably might feel useful too when looking for reviews using CRP. Furthermore, the respondents also convinced that other users could easily learn on using the Tags and Tagging system given the strong indication of their recommendations scores. Based on the high scores of likeliness to recommend the CRP system to other friends, it also has reflected that the CRP with Tags and Tagging concept is likely beneficial in bigger scope of online shopping environment; more online shoppers.
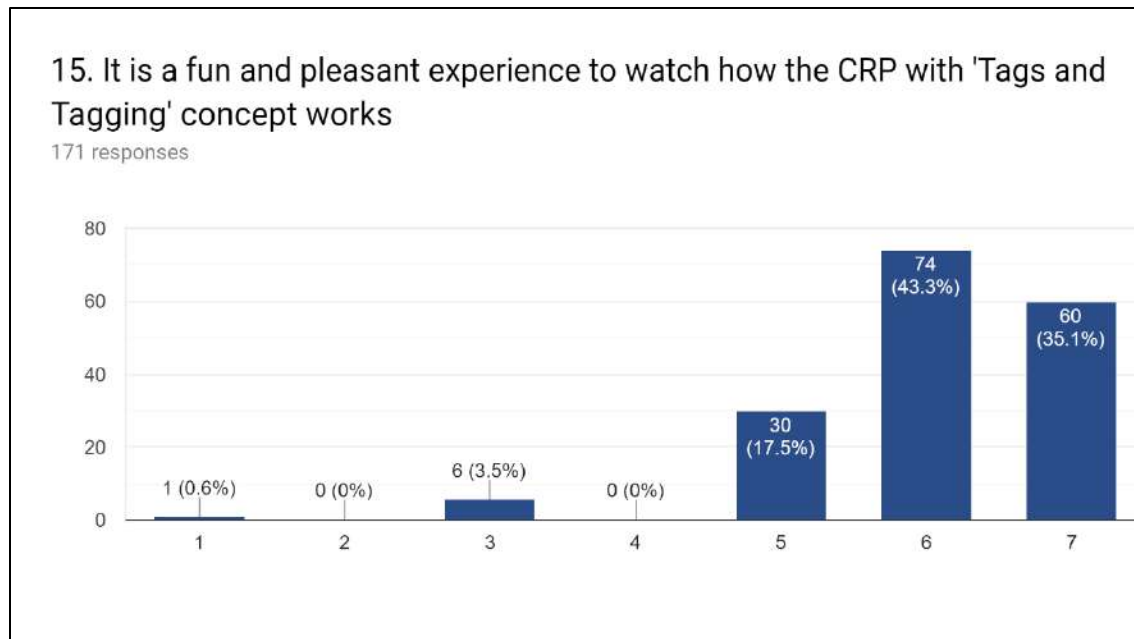
Figure 104 The result of Experience of watching CRP system functions

The result in the figure above shows that 35.1% of respondents strongly agree and 43.3% agree that they had fun experience in watching how the Tags and Tagging concept in CRP works. Followed by the previous result of satisfaction level and likeliness of recommendation of use to friends, the fun experience the respondents had, has given the opportunity to the respondents to explore other concepts of using customer reviews. The high score of agreeing by the respondents also has indicated that the respondents had fun and pleasant experience of exploring other concepts of using customer reviews which is the Tags and Tagging concept in CRP system.
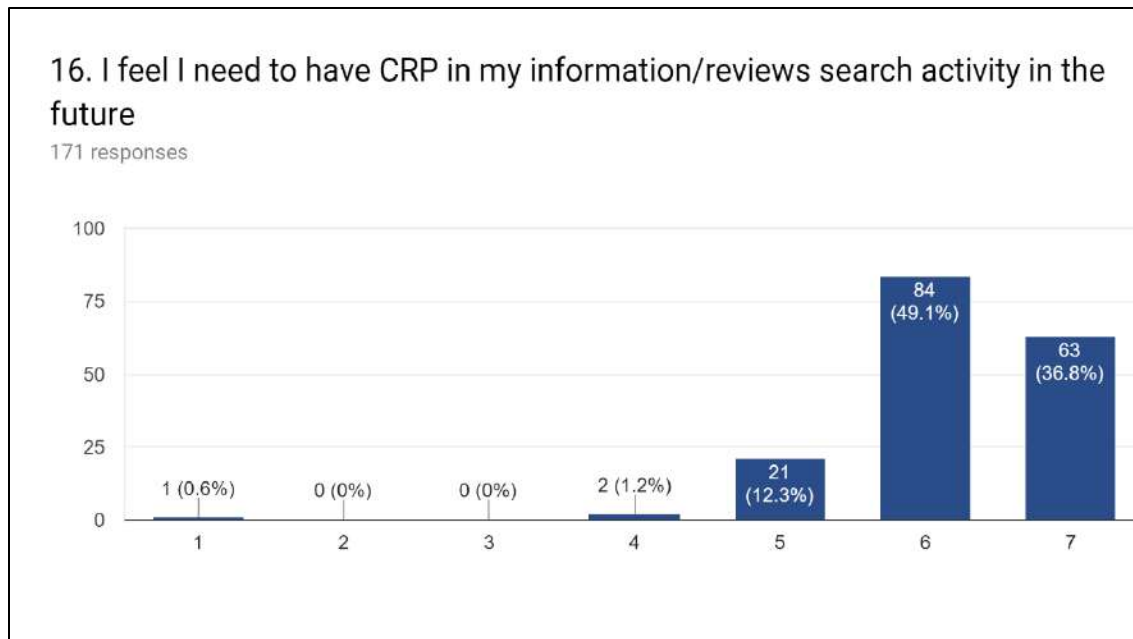
Figure 105 The result of CRP is needed in the future

The result in the figure above shows that 36.8% of respondents strongly agree and 49.1% agree that the respondents will use the CRP again in the future. Based on the result obtained, the majority of the respondents have the intention to use in the future. This indication reflected good preliminary acceptance of Tags and Tagging concept applied in CRP system. Besides, it is a key measure to find out if the concept of using customer reviews is perceived understood and practical, by knowing first if it is perceived useful and easy to use. As the survey has gathered significant survey results, the Tags and Tagging concept has proven to be perceived useful and easy to use.

III. Hypotheses Testing on TAM variables

In this section, there are three (3) hypotheses developed in relation to measuring the correlation between all three (3) TAM constructs used in this survey. The TAM constructs are used to measure the level of acceptance toward Tags and Tagging concept as demonstrated in the CRP system. In this context, the study intended to find out the relationships of all the constructs to see whether one aspect of TAM construct affects the others. From the correlation test conducted in SPSS, this study can figure out the perceived attitude of the respondents towards the new concept proposed.

Correlations

			PERCEIVED USEFUL	PERCEIVED EASE OF USE	INTENTION TO USE
Spearman's rho	PERCEIVED USEFUL	Correlation Coefficient	1.000	.687**	.737**
		Sig. (2-tailed)	.	.000	.000
		N	171	171	171
	PERCEIVED EASE OF USE	Correlation Coefficient	.687**	1.000	.792**
		Sig. (2-tailed)	.000	.	.000
		N	171	171	171
	INTENTION TO USE	Correlation Coefficient	.737**	.792**	1.000
		Sig. (2-tailed)	.000	.000	.
		N	171	171	171

**. Correlation is significant at the 0.01 level (2-tailed).

Figure 106 The result of Correlations between Perceived Useful, Ease of Use and Satisfaction or Intention to Use.

Hypothesis 1 (H1) – Perceived Useful positively affects perceived ease of use of using CRP

Based on the result as shown in the above table, has indicated that there is a positive relationship between Perceived Useful and Perceived Ease of Use with 0.687 scores of correlation coefficient. The score is higher than 0.5 and therefore, the H1 is supported due to strong correlation result indicated. From this correlation developed, it had signified that when the respondents perceived CRP as useful, they also perceived that the CRP is easy to use. The same goes vice versa, when the respondents perceived that CRP system is easy to use, they also strongly perceived that the CRP is useful.

Hypothesis 2 (H2) – Perceived Ease of Use positively affect Intention to Use

Based on the result as shown in the above table, has indicated that there is a positive relationship between Perceived Ease of Use and Intention to Use with 0.792 scores of correlation coefficient. The score is higher than 0.5 and therefore, the H2 is supported due to strong correlation result indicated. From this correlation developed, it had signified that when the respondents perceived CRP as easy to use, it is likely to increase the intention to use the CRP in the future. The same goes the other way round, when the respondents perceived that they intended to use in the future, it was because they have perceived that the CRP system is easy to use.

Hypothesis 3 (H3) – Perceived Useful positively affect Intention to Use

Based on the result as shown in the above table, has indicated that there is a positive relationship between Perceived Useful and Intention to Use with 0.737 scores of correlation coefficient. The score is higher than 0.5 and therefore, the H3 is supported due to strong correlation result indicated. From this correlation developed, it had signified that when the respondents perceived CRP as useful, it is likely to increase the intention to use the CRP in the future. The same goes the other way round, when the respondents perceived that they intended to use in the future, it was because they have perceived that the CRP system is useful.

III.   Cross tabulation Results Analysis

The third section will present the statistical results of cross tabulation between the nominal data result of the three (3) TAM variables; Perceived Usefulness, Perceived Ease of Use and Satisfaction (Intention to Use) with one (1) and one (1) ordinal data result that represents the key characteristic of the most appropriate and relevant respondents for this User Evaluation Phase 1, survey on the use of Tags and Tagging concept in CRP System. The ordinal data chosen is the status of the respondents in regards to using customer reviews (CR). Since this is an evaluation of concept Tags and Tagging in Customer Review Prototype System, the actual most suitable respondents are the ones that are using customer reviews in their online shopping process. However, since the aim of this evaluation was to get data that is varied (from possible CR user or non CR user), hence not purposive sampling technique was applied instead. Next are the selected significant cross-tabulations results.

Do you use CR * Tags useful in rev search process (Useful) Crosstabulation

Count

		Tags useful in rev search process (Useful)						Total
		disagree	somewhat disagree	neither	somewhat agree	agree	strongly agree	
Do you use CR	Always	1	0	2	19	51	44	117
	Sometimes	0	1	1	11	19	22	54
Total		1	1	3	30	70	66	171
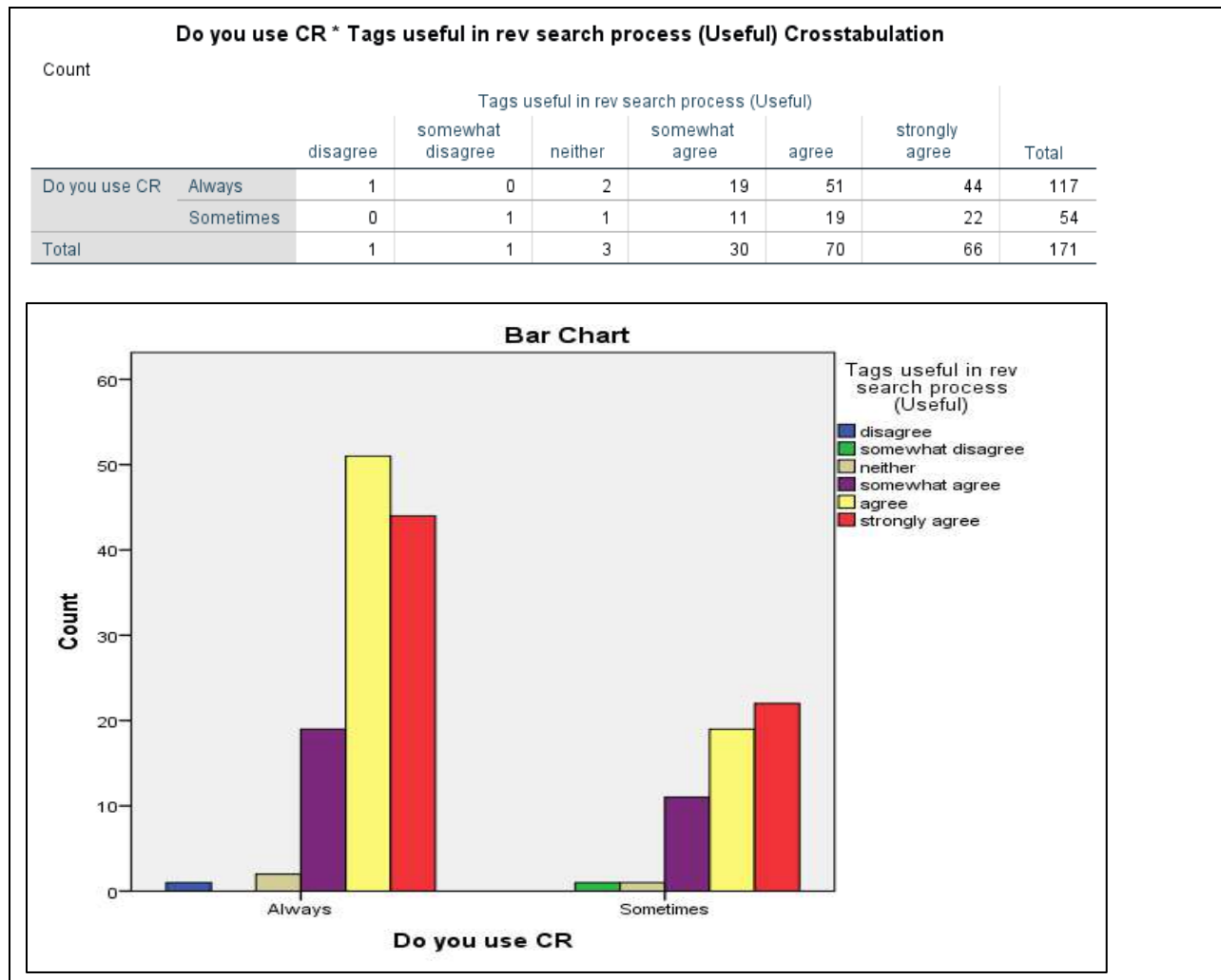
Figure 107 The result of cross-tabulations for the information search process

Based on the result in the figure above, it has indicated that there is a correlation between the regularity of using customer reviews (CR) with the results of perceiving Tags is useful in information or review search process. The respondents who always use CR are most likely to perceive that Tags is useful in the review search process with 55.6% (of overall 171 respondents) from the range Agree and Strongly Agree groups. From the histogram and table of results above, it shows that the result of the perceived tags is useful is lower among respondents who seldom use CR compared to respondents who always use CR by 31.6%. Thus, that probably means that the ones who always use CR understand more how Tags is perceived as a useful tool in finding reviews process due to their familiarity and better understanding in the actual reviews search process.

Do you use CR * Tags concept easy to use (Ease of Use) Crosstabulation

Count

		Tags concept easy to use (Ease of Use)						Total
		disagree	somewhat disagree	neither	somewhat agree	agree	strongly agree	
Do you use CR	Always	1	0	5	23	50	38	117
	Sometimes	0	1	2	12	17	22	54
Total		1	1	7	35	67	60	171
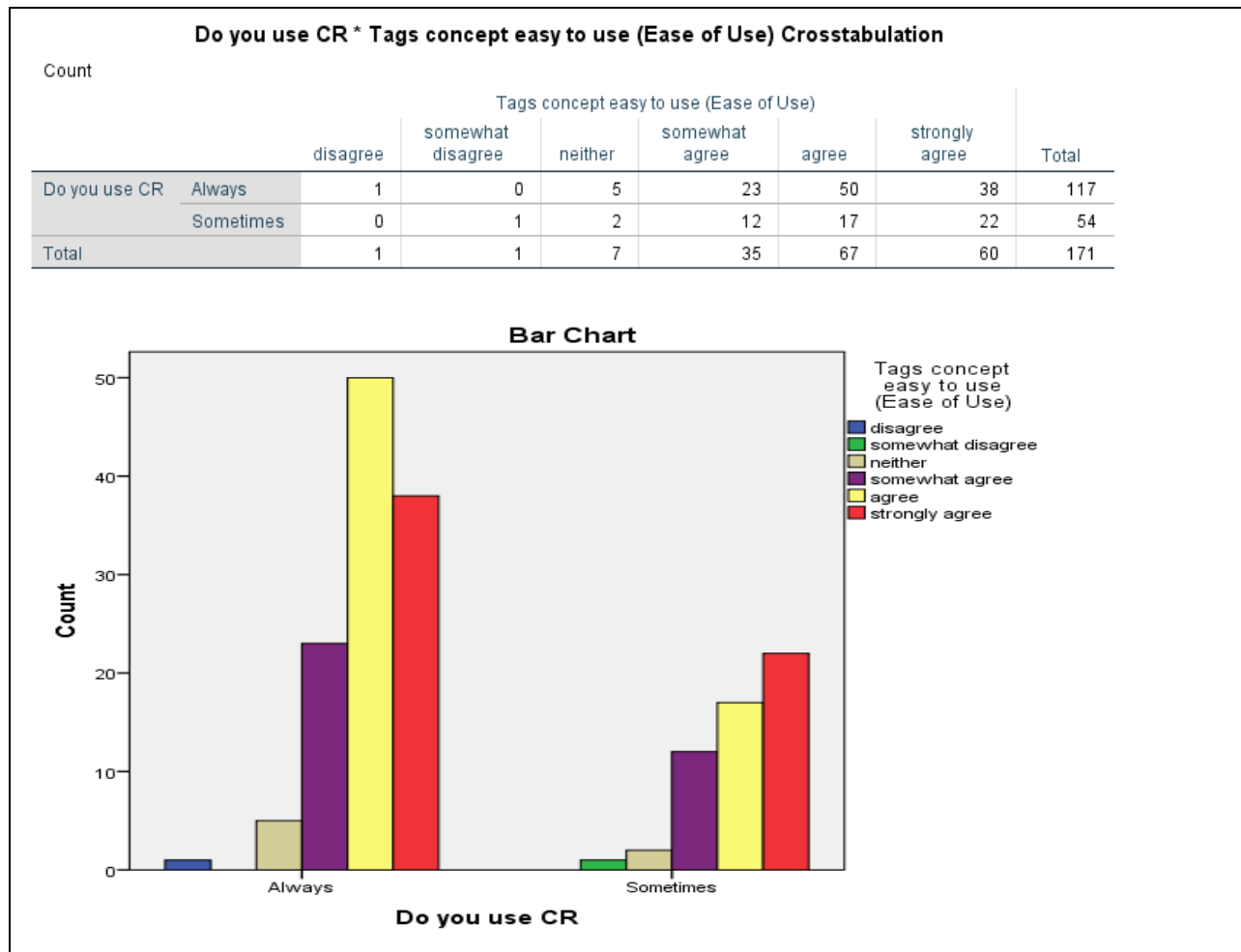
Figure 108 The result of cross-tabulations for Tags are perceived as easy to use

Based on the result in the figure above, it has indicated that there is a correlation between the regularity of using customer reviews (CR) with the results of perceiving Tags is useful in information or review search process. The respondents who always use CR are most likely to perceive that Tags is useful in the review search process with 51.5% (of overall 171 respondents) from the range Agree and Strongly Agree groups. From the histogram and table of results above, it shows that the result of the perceived tags is useful is lower among respondents who seldom use CR compared to respondents who always use CR by 28.7%. Thus, that probably means that the ones who always use CR understand more how Tags is perceived as an easy to use tool in finding reviews process due to their familiarity and better understanding in the actual using or referring customer reviews process.

Do you use CR * Easy to do tagging (Ease of Use) Crosstabulation

Count

		Easy to do tagging (Ease of Use)						Total
		disagree	somewhat disagree	neither	somewhat agree	agree	strongly agree	
Do you use CR	Always	1	1	3	29	56	27	117
	Sometimes	0	1	2	10	23	18	54
Total		1	2	5	39	79	45	171
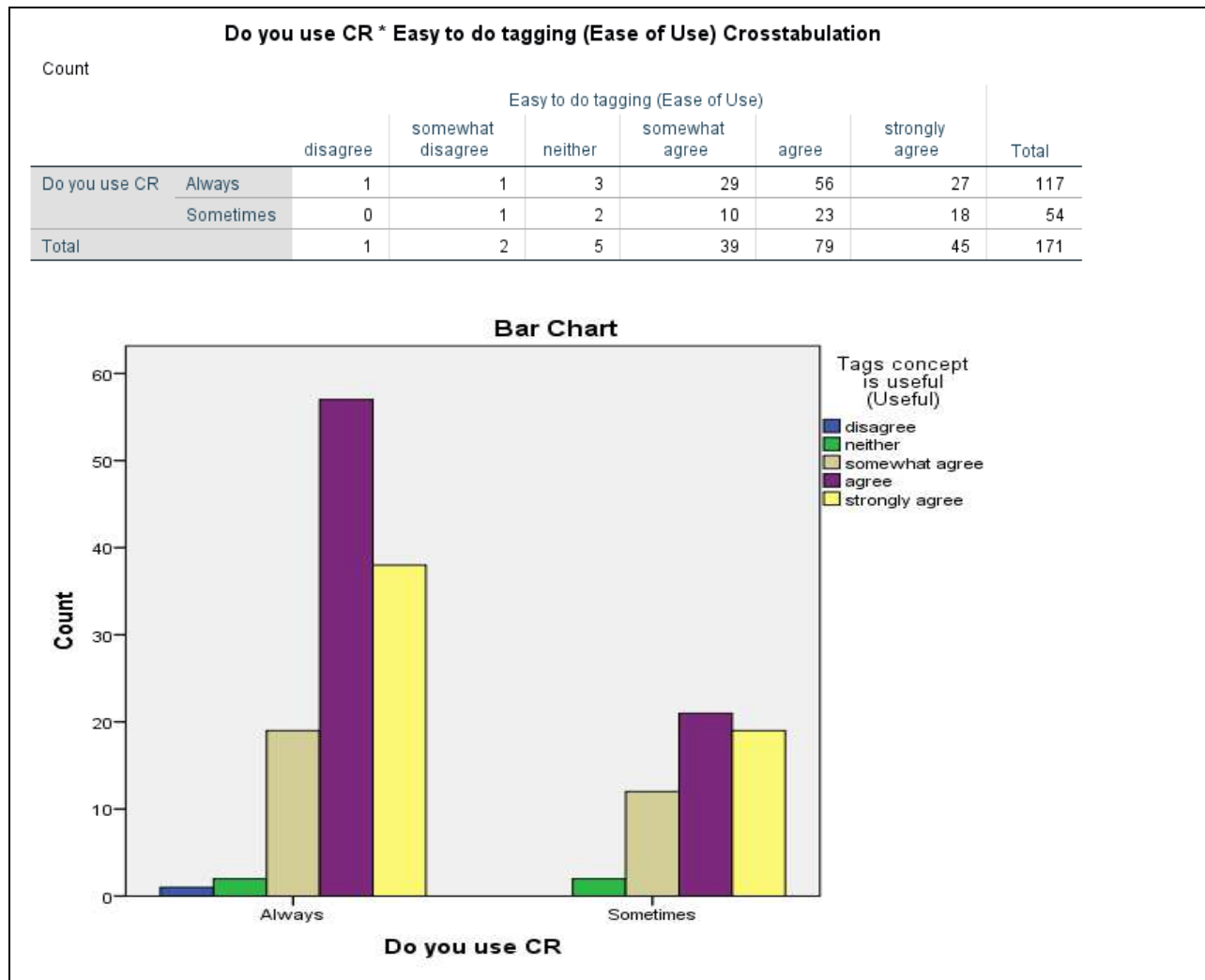
Figure 109 The result of cross-tabulations for Easy to do tagging in CRP

Based on the result in the figure above, it has indicated that there is a correlation between the regularity of using customer reviews (CR) with the results of perceiving it is easy to perform tagging in CRP. The respondents who always use CR are most likely to perceive that it is easy to do tagging with 48.5% (of overall 171 respondents) from the range Agree and Strongly Agree with groups. From the histogram and table of results above, it shows that the result of the perceived tagging works is easy to do is lower among respondents who seldom use CR compared to respondents who always use CR by 24.6%. Thus, that probably means that the ones who always use CR easily related to the task of tagging reviews and found it is easy to do so due to their familiarity and better understanding in the actual writing reviews process.

Do you use CR * Find rev quickly with tags (Useful) Crosstabulation

Count

		Find rev quickly with tags (Useful)				Total
		neither	somewhat agree	agree	strongly agree	
Do you use CR	Always	3	11	45	58	117
	Sometimes	2	10	19	23	54
Total		5	21	64	81	171
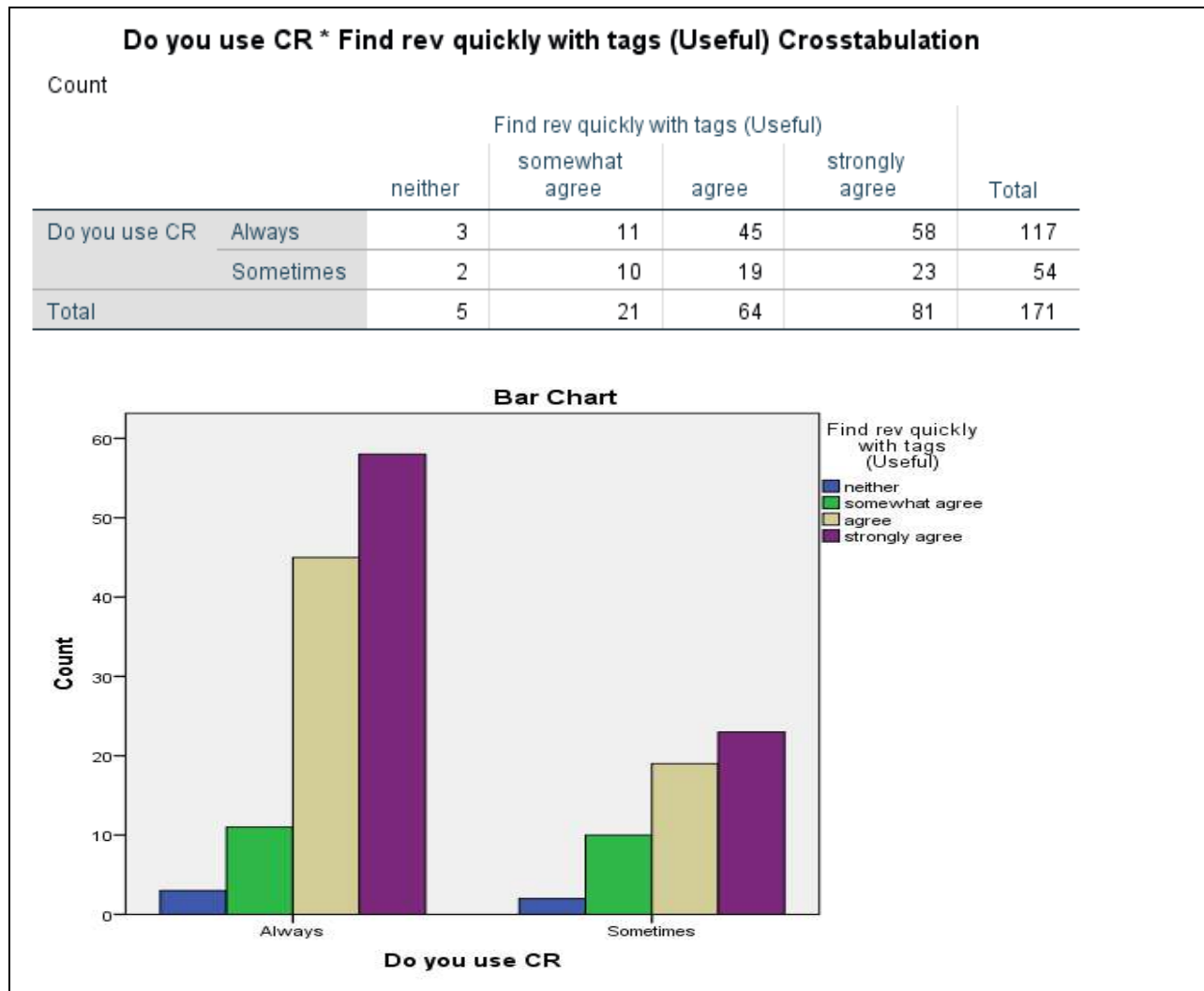
Figure 110 The result of cross-tabulations for finding reviews is quick with tags.

Based on the result in the figure above, it has indicated that there is a correlation between the regularity of using customer reviews (CR) with the results of perceiving Tags is useful to find desired reviews quickly. The respondents who always use CR are most likely to perceive that Tags is useful to find relevant reviews with 60.2% (of overall 171 respondents) from the range Agree and Strongly Agree with groups. From the histogram and table of results above, it shows that the result of the perceived tags is useful is lower among respondents who seldom use CR compared to respondents who always use CR by 35.6%. Thus, that probably means that the ones who always use CR understand more how Tags is perceived as a useful tool in finding reviews quickly due to their familiarity and better understanding in actual finding relevant or desired reviews process.

Do you use CR * Tags control rev search by tags (Useful) Crosstabulation

Count

		Tags control rev search by tags (Useful)						Total
		disagree	somewhat disagree	neither	somewhat agree	agree	strongly agree	
Do you use CR	Always	1	1	2	12	54	47	117
	Sometimes	0	0	1	7	25	21	54
Total		1	1	3	19	79	68	171
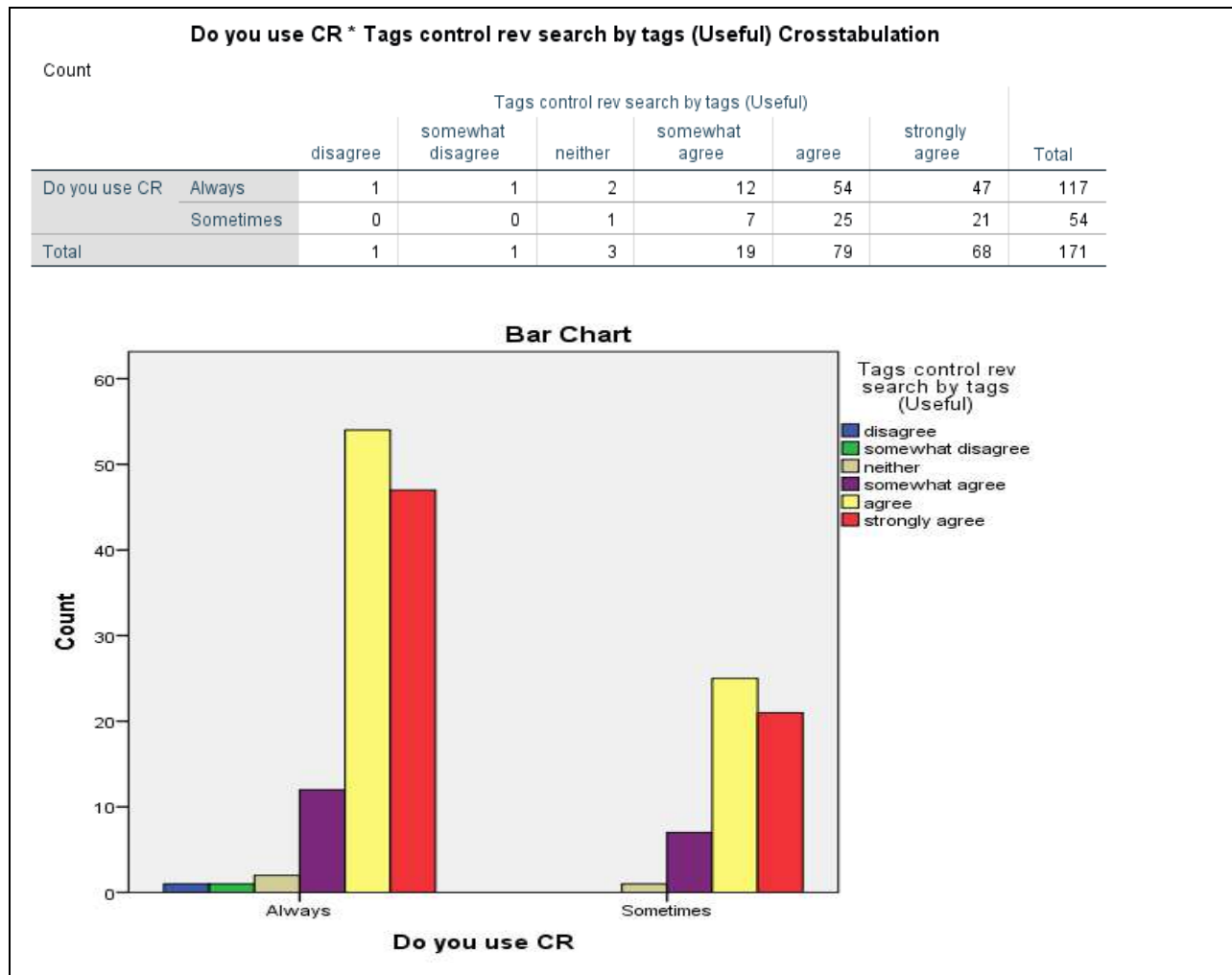
Figure 111 The result of cross-tabulations for Tags control reviews search process

Based on the result in the figure above, it has indicated that there is a correlation between the regularity of using customer reviews (CR) with the results of perceiving CRP gives control to users in terms of selecting which reviews to be displayed and presented. The respondents who always use CR are most likely to perceive that Tags give control to users in how they search for reviews they wanted with 59.0% (of overall 171 respondents) from the range Agree and Strongly Agree with groups. From the histogram and table of results above, it shows that the result of the perceived tags is useful is lower among respondents who seldom use CR compared to respondents who always use CR by 27.0%. Thus, that probably means that the ones who always use CR understand more how Tags give control to the users in regards to choosing what reviews the user wanted it displayed.

276

Do you use CR * Save time find preferred rev with tags(Useful) Crosstabulation

Count

		Save time find preferred rev with tags(Useful)					
		disagree	neither	somewhat agree	agree	strongly agree	Total
Do you use CR	Always	1	2	14	47	53	117
	Sometimes	0	2	9	20	23	54
Total		1	4	23	67	76	171
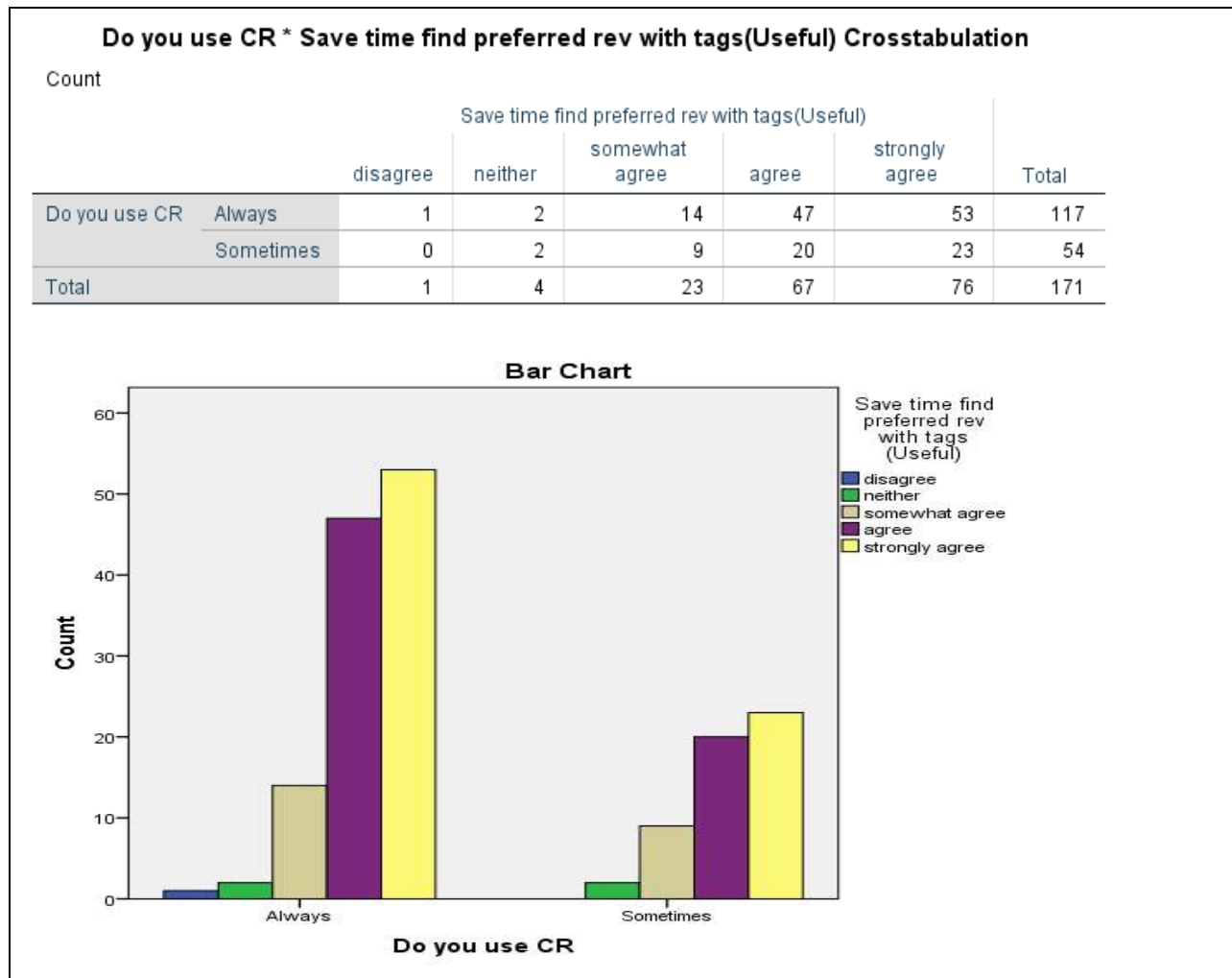
Figure 112 The result of cross-tabulations for Tags save time finding relevant information

Based on the result in the figure above, it has indicated that there is a correlation between the regularity of using customer reviews (CR) with the results of perceiving Tags can save time to find relevant information or reviews. The respondents who always use CR are most likely to perceive that Tags can save time with 58.5% (of overall 171 respondents) from the range Agree and Strongly Agree with groups. From the histogram and table of results above, it shows that the result of the perceived tags save time to find relevant reviews is lower among respondents who seldom use CR compared to respondents who always use CR by 33.3%. Thus, that probably means that the ones who always use CR understand more how Tags can save user's time in finding relevant information due to their familiarity and better understanding in the time consumption on actual finding relevant reviews process.

277
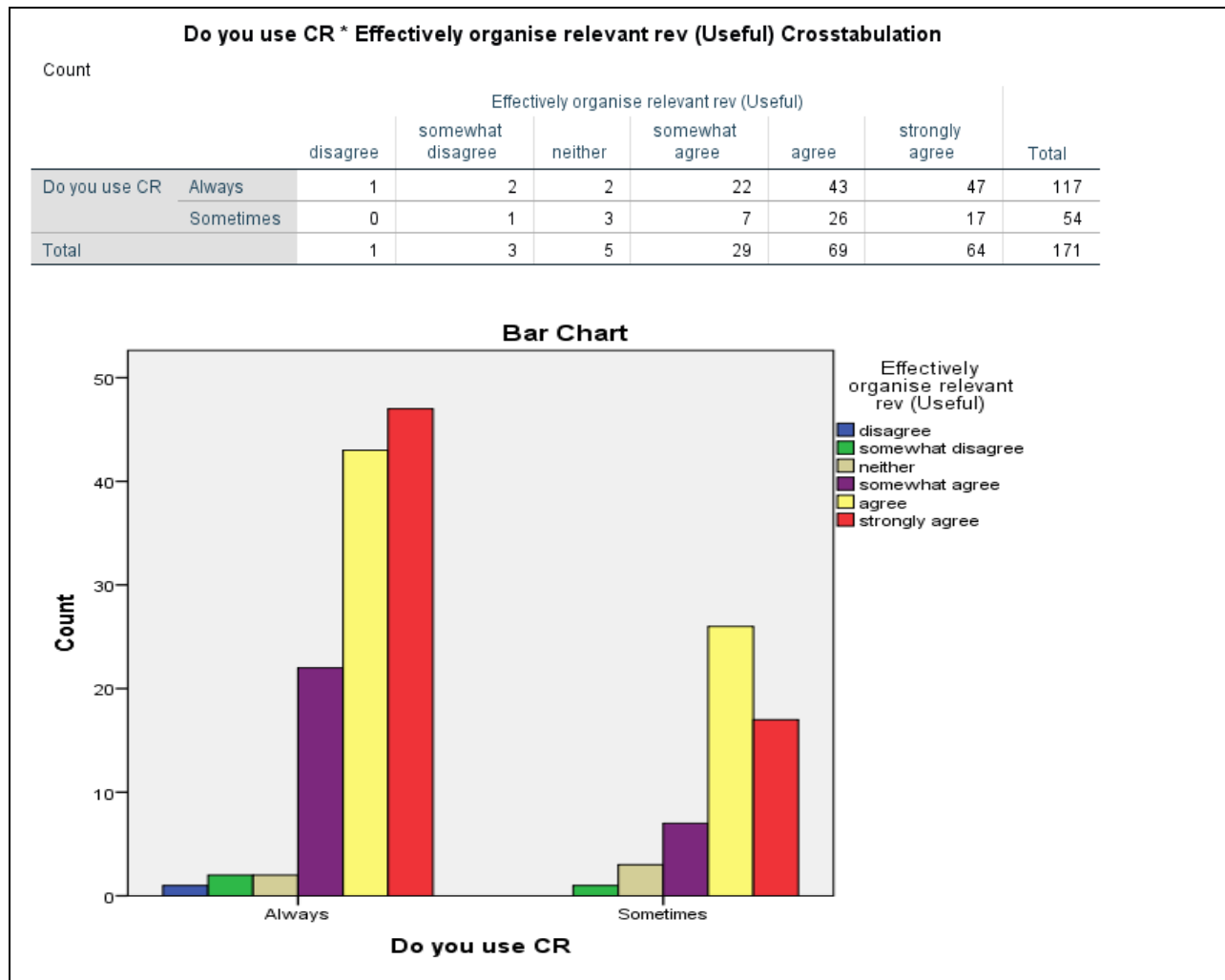
Figure 113 The result of cross-tabulations for effective organisation of CR

Based on the result in the figure above, it has indicated that there is a correlation between the regularity of using customer reviews (CR) with the results of perceiving Tags is useful as it organised reviews effectively. The respondents who always use CR are most likely to perceive that Tags is useful in effective reviews organisation with 52.6% (of overall 171 respondents) from the range Agree and Strongly Agree with groups. From the histogram and table of results above, it shows that the result of the perceived tags is useful in organising reviews effectively is lower among respondents who seldom use CR compared to respondents who always use CR by 27.4%. Thus, that probably means that the ones who always use CR understand more how Tags are perceived as a useful tool in effectively organising reviews due to their familiarity and better understanding in the actual reviews organisations are.

Prior is the all the seven (7) selected significant results of cross-tabulations between the ordinal variable; regularity of using CR among respondents and nominal variable, the two key TAM construct, perceived useful (PU) and ease of use (PEOU). From those cross tabs result, this User Evaluation Phase 1 Survey has drawn a few key findings in summary followed.

The result on perceived usefulness of Tags and Tagging concept in CRP in terms of reviews organisation, finding relevant reviews, time consumption in the reviews search process and user control over the presentation and display of reviews, is most likely higher among respondents who are regularly using customer reviews in their online shopping activity or process. The high scores from these CR regular users clearly demonstrated high familiarity and experience on using customer reviews system compared to non-regular user group. The probability of the regular CR users to understand the purpose and objectives of the Tags and Tagging concept is high too. The relationship of the respondents' feedback and TAM constructs has developed positive correlation. That means, CR regular users who use CR frequently, understand more of the Tags and Tagging in CRP system. While non-regular CR users who use CR occasionally could understand the Tags concept in CRP too but not as much as the regular CR users. The non-regular users have consistently presented their feedbacks constant across all variables which is more moderate responses.

IV.   Descriptive Result and Analysis

The following page contained a table that shows the results of the questionnaire in the form of Descriptive Statistic mode. Based on the result, the average of the questionnaire result or the mean is '6' which indicating 'Agree' based on the Likert Scale used in the questionnaire. Please refer to the appendix for reference to the questionnaire set. The User Evaluation Phase 1 received one hundred and seventy-one (171) numbers of participants. See Table 2.5 of the descriptive analysis of the results.

Table 2.5: The Result of User Evaluation Phase 1 (Questionnaire)

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Tags concept is useful (Useful)	171	2	7	6.08	.836
Find rev quickly with tags (Useful)	171	4	7	6.29	.795
Tags control rev search by tags (Useful)	171	2	7	6.21	.828
Save time find preferred rev with tags(Useful)	171	2	7	6.24	.844
Effectively organise relevant rev (Useful)	171	2	7	6.07	.955
Tags useful in rev search process (Useful)	171	2	7	6.13	.874
Tags concept easy to use (Ease of Use)	171	2	7	6.02	.933
Easy to do tagging (Ease of Use)	171	2	7	5.92	.897
Easy to get preferred rev by tags(Ease of Use)	171	3	7	6.11	.819
Effortless to find rev by tags (Ease of Use)	171	3	7	5.99	.930
Efficiently organise rev by tags (Ease of Use)	171	3	7	6.01	.837
Easy to use in rev search process (Ease of Use)	171	3	7	6.12	.856
Satisfied use tags concept (Satisfaction)	171	3	7	6.08	.877
Would recommend a friend to use (Satisfaction)	171	2	7	6.19	.842
Fun Pleasant to use tags (Satisfaction)	171	2	7	6.05	.990
Need tags in rev search process(Satisfaction)	171	1	7	6.08	.871
Valid N (listwise)	171				

6.9 Limitation of Study

In the User Evaluation Phase 1, the limitation discovered is in a few aspects in relation to the sample of respondents. The evaluation result is lack of variety in terms of respondents' origin. The respondents who participated are mostly Malaysian citizens and are directly and non-directly as acquaintances to the researcher. Although the invitation to participate in the survey was put up on public page of the researcher's social media account and her university acquaintances email list, the responses gathered did not vary as much as in the Primary Research. Therefore, the results presented are more likely to present the perceived impressions of the Malaysian online shoppers or users toward Tags Tagging concept in CRP system. However, even so most of the respondents are Malaysians, but according to the level of needs of CR, Malaysian online shoppers tend to rely more on CR due to the culture of people doing online shopping here in the UK.

Getting the experience of living and studying in the UK, those Malaysian respondents were genuinely defined as CR users as they had engaged with online shopping culture here. Although the ethnicity background of respondents did not vary, the other demographic factors such as regularity of using CR and understanding of using CR culture has given this survey evaluation great, logical, consistent and promising results. However, this bias will lead to another indirect effect on the final evaluation phase if the respondents from the 1st user evaluation happened to continue participation in the 2nd user evaluation. That is because the medium of invitation is the same, using social media and email list platforms.

6.8 Summary of Chapter

Based on the results of validity and reliability checks conducted on the questionnaire set in the User Evaluation Phase 1 shows that the results gathered are valid and reliable hence it can be used to measure the level of perceived acceptance of the users toward the Tags and Tagging Concept in online customer reviews system. The result of the evaluation indicated that the average user acceptance level is on the scale of 6, which means 'Accept' based on the Likert Scale measurement. The result means that users accept the Tags and Tagging concept introduced. The result also indicated that the users were perceived satisfied with using and demonstrated the system prototype.

See the figure below for the screenshot of the Questionnaire Form with embedded Demonstration Video. The next chapter will discuss further on the User Evaluation Phase 2 as the final user evaluation in this study.

Figure 114 A Screenshot of the Questionnaire and embedded Demonstration Video

Chapter 7

User Evaluation Phase 2

7.1 Introduction

In relation to the User Evaluation Phase 1, this chapter will present the findings and result of the User Evaluation Phase 2. This is the last phase of the user evaluation series. In this User Evaluation Phase 2, it aims to figure out the real reactions and response from the actual use in the actual setting regarding the proposed concept of Tags and Tagging in the online customer review system. The system used thousands of real customer reviews data gathered from the Amazon UK. The difference between the User Evaluation Phase 1 and Phase 2 is, in Phase 1, the system was on the offline mode while in Phase 2, the system was on the online mode. When the system was put and made available online, it allows the user to reach the system voluntarily.

7.2 The Relation between User Evaluation Phase 1 and Phase 2

The relation of those two phases of user evaluation is the continuity of the evaluation process from the attitude based on the actual use. The reason for conduction the first phase user evaluation first was because to establish the preliminary response of the user regarding their acceptance towards the proposed Tags and Tagging Concept in the online customer reviews system. The result from the User Evaluation Phase 1 indicated that there was an affirmative acceptance of the users. Hence, this phase continues to evaluate their acceptance and experience in a real setting with real responses.

7.3 The Development of the Prototype System (Online Version)

The system prototype is an online version system. It was coded using Python 3 interacted and aligned with MySQL as the database and an additional platform which is Codio. The Codio platform is used as the server when the system went online. The server runs and manages the usage of the online prototype of every user in real-time.

The prototype system was established to present the five (5) categories of information in customer reviews for preliminary user evaluation. The following shows the three (3) of figures illustrating

the interfaces design of the online version prototype system where it displays the, Figure 4.3 Home page contained the picture of kitchen products alongside their respective product descriptions and the review hypertext, Figure 4.4 the Tags of the customer reviews page and also Figure 4.5 the Write Review feature page. Each product has a different database of reviews.

The reviews displayed in the system were the real reviews and gathered from the Amazon UK database. The products used in this online version of customer reviews prototype system is kitchen products. The selection of the kitchen products was because of its popularity among online shoppers. Besides, by using the kitchen products, it opens to a bigger chance of getting the participation of users. Most of the users responded circa June to August and November to January.

The reason for the participation response pattern was due to season sale. From June to August, it usually has summer sale while November to December it usually experiences the Christmas sale. At these periods of sale are the best times to shop as the price drop was significant and until up to ninety per cent (90%) off discounts were offered. Hence, it resulted in high participation in the evaluation study.

Figure 115 A Screenshot of the Write A Review page Prototype System
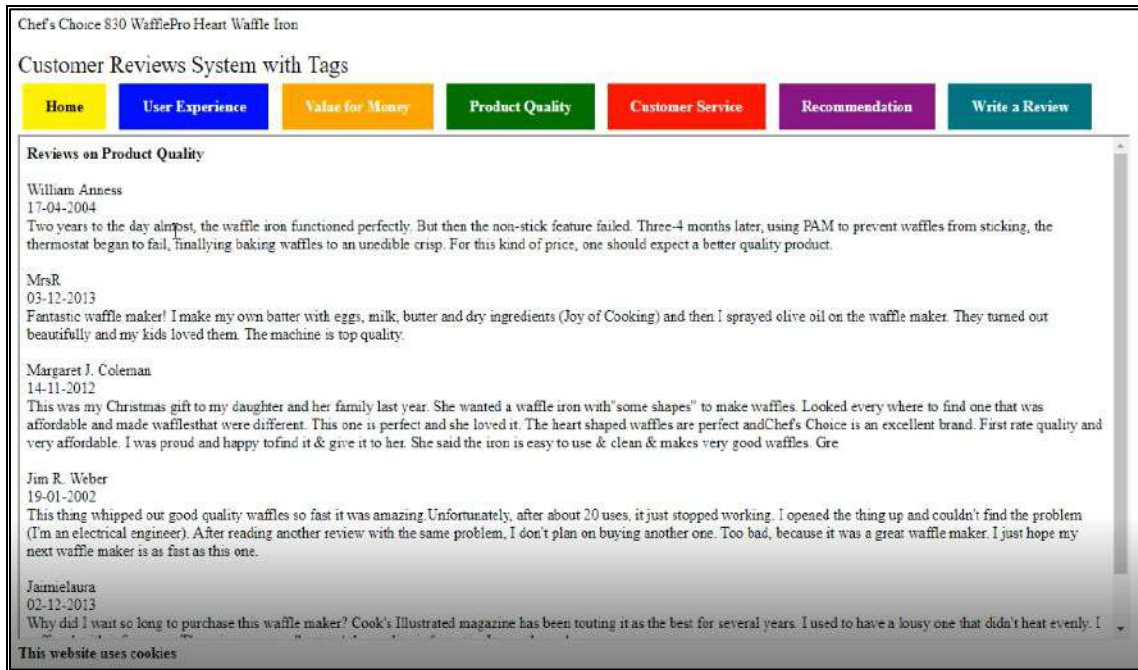
Figure 116 A Screenshot of the Tags displayed on the Online Prototype System

Figure 117 A Screenshot of the Write A Review page Online Prototype System

7.4 Technology Acceptance Model (TAM) as the Constructs of Data Interview Analysis Approach

This user evaluation still used the TAM framework to guide the evaluation and the analysis of the interviews data. The data analysis used predefined codes generated from the TAM approach; Ease of Use and Useful. Then, the two constructs were combined with other 'in-vivo' codes generated. The 'in-vivo' codes mean the codes generated directly from the text or interview transcripts of the participants. The further details will explain more on how the user evaluation being conducted and the results gathered from the in-depth interviews conducted to the participants.

7.5 Ethnographically-Informed Observation as the Evaluation Method

The approach used is the Ethnographically-Informed Observation on this User Evaluation Phase 2, while the method of data collection and evaluation used are Interview and Observation. This evaluation data is on the qualitative basis, and the reason of choosing the basis was due to the nature of this research, which is to understand and explore the way the users (the online shoppers) used the online customer reviews and how does the organisation and presentation of the reviews support their online shopping experience. Myres (1999) has persuasively stated his expression that the ethnographically-informed approach is useful and practically suitable for system user evaluation studies in the information system field. This is because of its capability to collect rich insights from the participants and explore the more meaningful interpretation of the results data. The use of Ethnographically-Informed Observation as an evaluation method is also meant to contradict the traditional ethnography method, which involved lengthier processes needed. Hence, this nine (9) months of the user evaluation period is practical and suitable to use the Ethnographically-Informed Observation method (Hammersley 1992). There are two dimensions of user evaluation involved; the reading reviews and writing reviews. The users' experiences on both dimensions will be used to form a data analysis report describing the responses towards using the Tags and Tagging concept.

7.6 Sampling Technique and Participants Background

For this User Evaluation Phase 2, the sampling technique used is different from the User Evaluation Phase 1 which is non-probability purposive sampling. However, the platforms used to blast invitation of participation is the same with User Evaluation Phase 1, using social media and email platform. In this user evaluation phase 2, the basis is qualitative data, not quantitative data as in the Phase 1 evaluation. Thus, qualitative basis required non-probability purposive sampling because the prospect participants must meet certain qualifying criteria before they are considered suitable candidates as the participants. The following are the criteria list for the prospect participants;

- Familiar with overall functionalities in online customer reviews system
- Familiar with the process of using and referring customer reviews system

However, there is an optional criterion that not necessary shall be met by the prospect participants which is;

- Familiar with the process of writing reviews in customer reviews system

The reasons of implying the additional option of a criterion are to open opportunity of this study to get prospect participants to venture the new proposed Tags and Tagging concept in the online version CRP system in terms of Tagging reviews other than using Tags to find reviews. However, this User Evaluation Phase 2 does not limit the scope of the participants as to allow more neutrality, willingness to explore and readability to venture into the newly proposed concept, Tags and Tagging while engaging in the online shopping activity. It means that the prospect participants did not necessarily have to perform both reading and writing reviews. They are allowed to do both or either one of them while recording their actions and behaviours on using the CRP system.

All three (3) criteria set by the researcher were mentioned in the invitation to participation post on social media. This is to make the prospect aware of the qualifying conditions especially the first two criteria that are not optional. The study is aware of the conditions set might prevent the researcher from reaching a minimum of thirty (30) participants. However, the rationale behind the setting is to minimise the risk of future participants to the following factors;

- wasting time trying to understand how CRP works and its functionalities.

- the decline of interest in exploring CRP system due to the lack of understanding of how the review system works.

- the likeliness of getting more participation withdrawal

Since this user evaluation is on a qualitative basis and using interview and video as the data collection methods, the requirement of participation is only thirty (30) person minimum. Since the duration of this user evaluation is longer than three (3) months, the study finally managed to get thirty (30) participations. Those thirty (30) participants are the ones who are conveniently reachable by the invitation link provided from the social media platform. The thirty (30) participants who responded were willingly agreed to participate in the user evaluation program and successfully met the criteria set.

The following details described the demographics of the thirty (30) participants who have successfully participated in the User Evaluation Phase 2.

- The participants' age is between the range of 22 to 35 years' old

- 28 of the participants are from Malaysia, 1 from Singapore and another 1 from Brunei

- Majority of the participants are students in the universities in the United Kingdom and the minority are professionals and home-makers too.

- All of the participants are familiar with the customer review system and its functionalities

- All of the participants are online shoppers (as acclaimed during the interview)

- All of the participants were willingly participate in the user evaluation

- All of the participants agree of not violating the study with inappropriate content in their video recordings

- All of the participants have given written consent of their data to be used strictly for the study purpose and fulfilled the ethical clearance process.

- All the participants are reachable and accessible by the researcher by any medium of communication platforms.

The following sections will discuss further on the result analysis based on the participants' videos regarding their attitudes, behaviours and interview sessions conducted.

7.7 Results of Online Actual-Use System Evaluation

Accordingly, this research critically investigates the types of information that acclaimed as important and relevant when online shoppers look into customer reviews. The important aspect of this user system evaluation is the insights that show how users produce, share and gather information through customer reviews. This section will present the result of observation based on the logs report provided and available on the server platform, Codio and through the video recordings of the participants or users who participated in this user evaluation study. This User Evaluation Phase 2 received thirty (30) participants with thirty (30) video recordings on their activity of using the online prototype system. The duration of this user evaluation is longer than the first phase evaluation. This is due to the requirement of the real use driven from their natural need and intention of the users. The use of the system cannot be forced or set up as this evaluation needs to get the natural behaviours of the users when they were using it for their purposes. The time taken is nine months, while the period of user evaluation and the data analysis process were running concurrently. The evaluation started in May 2017 and ended in January 2018.

7.7.1 The Observation Data Result

This section presented the report on the outcomes of observation made on the actual use of online customer reviews prototype with Tags and Tagging concept through Ethnographically-Informed Observation method. This method required the participants to record their acts and behaviours of using CRP in one (1) single video. This user evaluation phase 2 received thirty (30) participations and therefore, there are thirty (30) videos acquired for the researcher to observe and analyse their attitude, behaviours and actions toward exploring and using Tags and Tagging concept in CRP online version. The observation used MAXQDA software package to perform data coding during the observation process. The codes generated emerged during the observation period. The codes were named directly reflecting the observation of the participants' actions as presented in their videos. The report will be explained briefly by a few screenshots on the acts captured showing how the participants used, navigated and explored the Tags and Tagging system in CRP online version.

The further detailed observation analysis will be presented in the next section which is the analysis of observed behaviours on the use of Tags and Tagging. Thus at this section, only brief explanations given to each of the screenshot figures before followed by the detailed

analysis of observation in the later section. The figure below shows a screenshot of video observation process done using MAXQDA software.
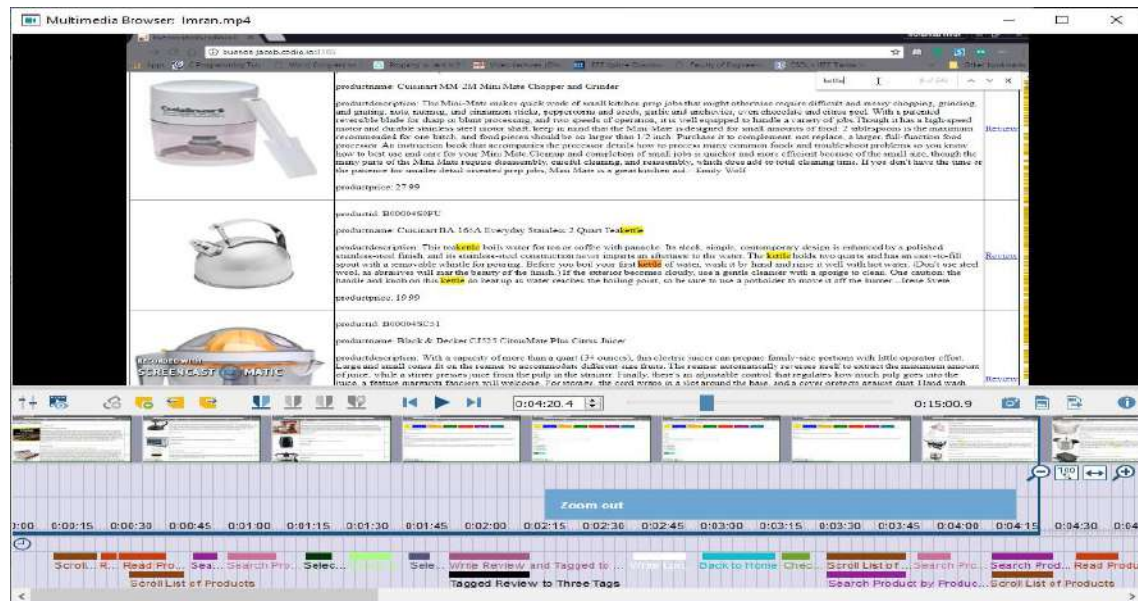
Figure 118 The screenshot of Video Observation process using MAXQDA software

While the other figure below shows a screenshot of codes generated during video observation process using MAXQDA software. From the observation period, there are thirty-two (32) observation codes emerged namely;

a. Select and View User Experience page

b. Select and View Customer Service page

c. Select and View Product Quality page

d. Select and View Recommendation page

e. Select and View Value for Money page

f. Select and View Home page

g. Clicked on Write a Review Button

h. Viewed Write a Review Button page

i. Write Review and Tagged to User Experience Tag

j. Write Review and Tagged to Customer Service Tag

k. Write Review and Tagged to Product Quality Tag

l. Write Review and Tagged to Recommendation Tag

m. Write Review and Tagged to Value for Money Tags

n. Tagged review to one tag

o. Tagged review to two tags

p. Tagged review to three tags

q. Tagged review to four tag

r. Tagged review to all tags

s. Assumed read product descriptions

t. Search product by product types

u. Search product by product brands

v. Select Tag from Left to Right

w. Select Tag from Right to Left

x. Select only one tag

y. Select tag randomly

z. Select Tags first before write review

aa. Write review first before select tags

bb. Scroll list of products

cc. Opened multiple links of reviews in other tabs

dd. Opened reviews of the product in the same one page

ee. Visited review page where a review is tagged

ff. Clicked on Submit button after written reviews

Majority of the codes are meant for further video observation analysis to develop the patterns of use, tags that are the least and most used or visited, tags are the least and most tagged, the number of tags ticked and more to be detailed out in the next section. However, as for now, let's recap a few screenshots taken during the observation period to show the behaviours of the participants' while using CRP.

Figure119 The screenshot of Codes generated using MAXQDA software
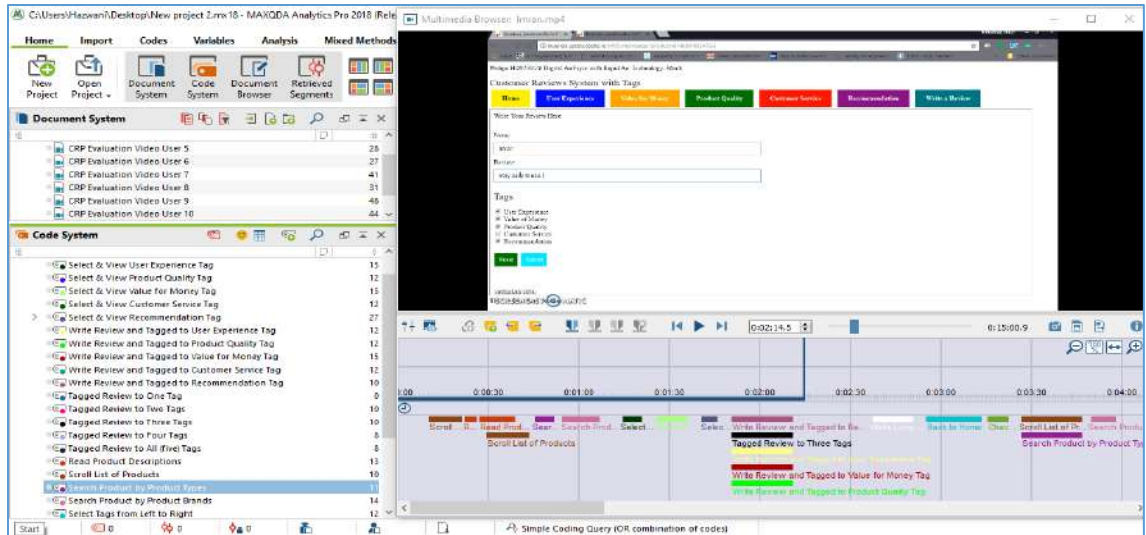
Another figure below shows a screenshot of videos of using CRP sent by the participants

Figure 120 The screenshot of an example of user evaluation video recordings
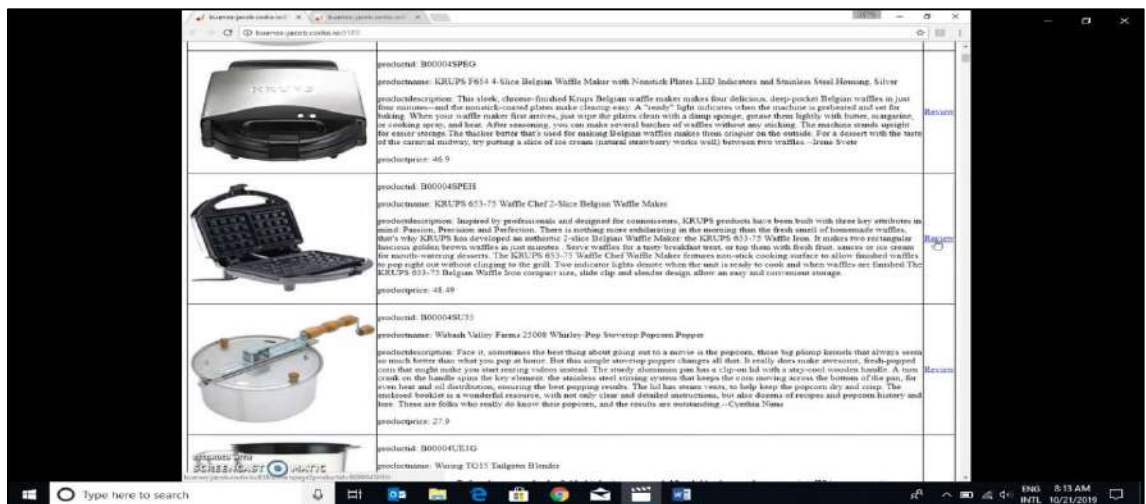
The next figure shows a participant opened and viewed Product Quality reviews page
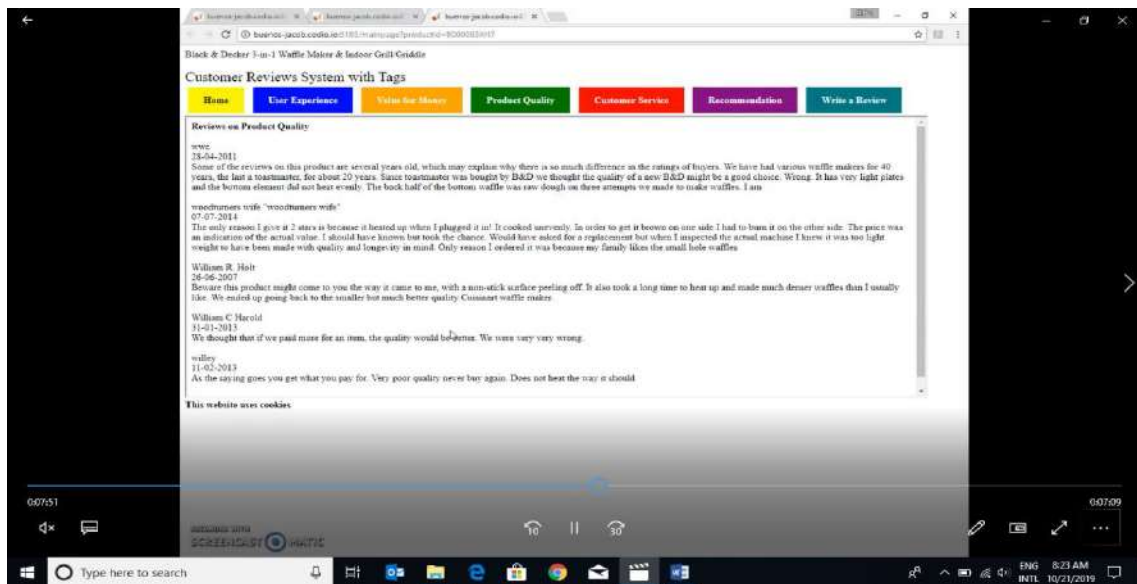
Figure 121 The screenshot of a participant opened and viewed Product Quality reviews page

The following figure shows a screenshot of a participant who searches product by brands
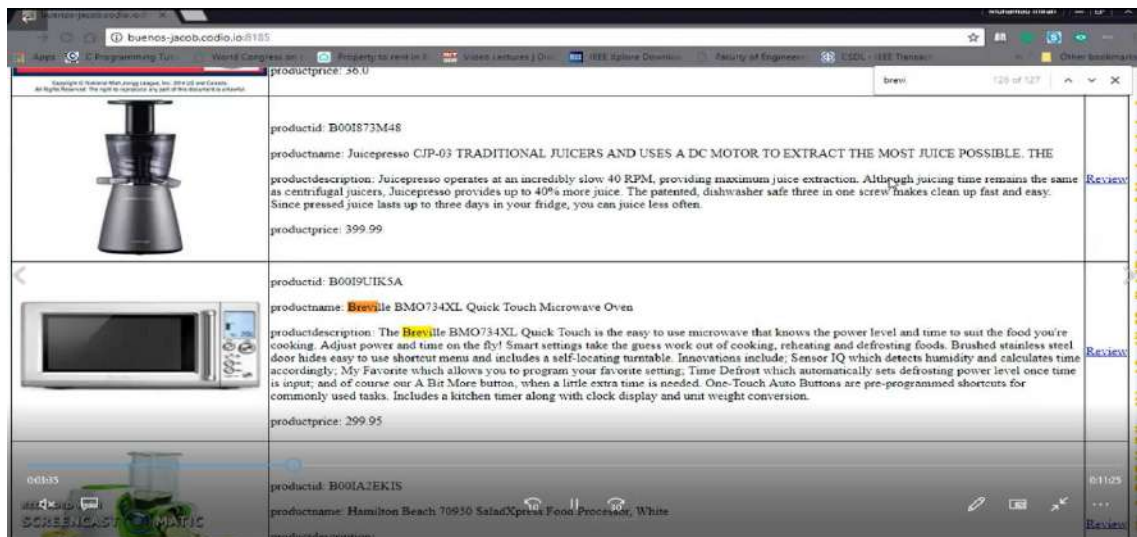
Figure 122 The screenshot of a participant who searches product by brands

The following figure shows a screenshot of a participant who searches product by product type
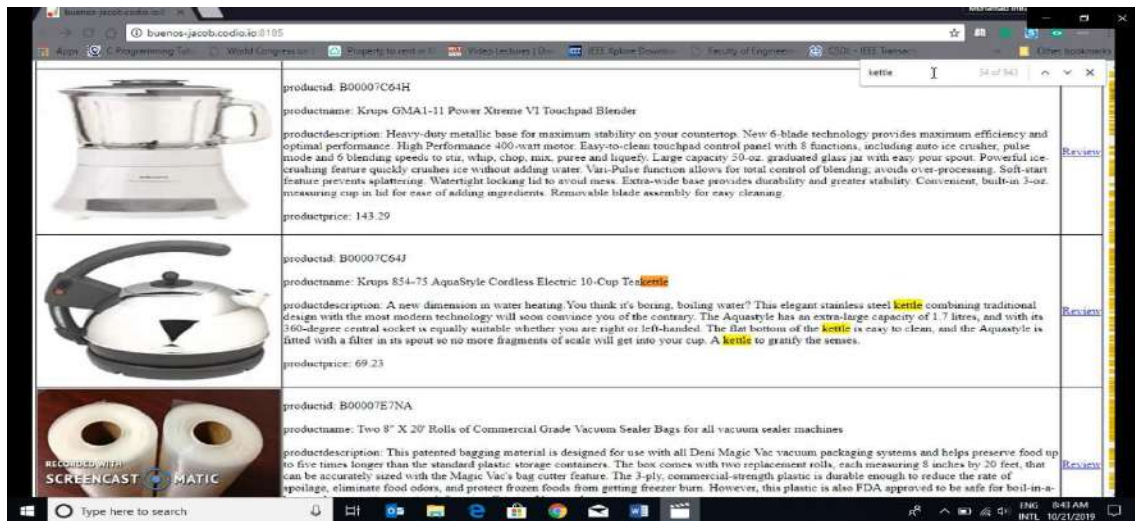
Figure 123 shows a screenshot of a participant who searches product by product type

The following figure shows a screenshot of a participant who searches product by brands
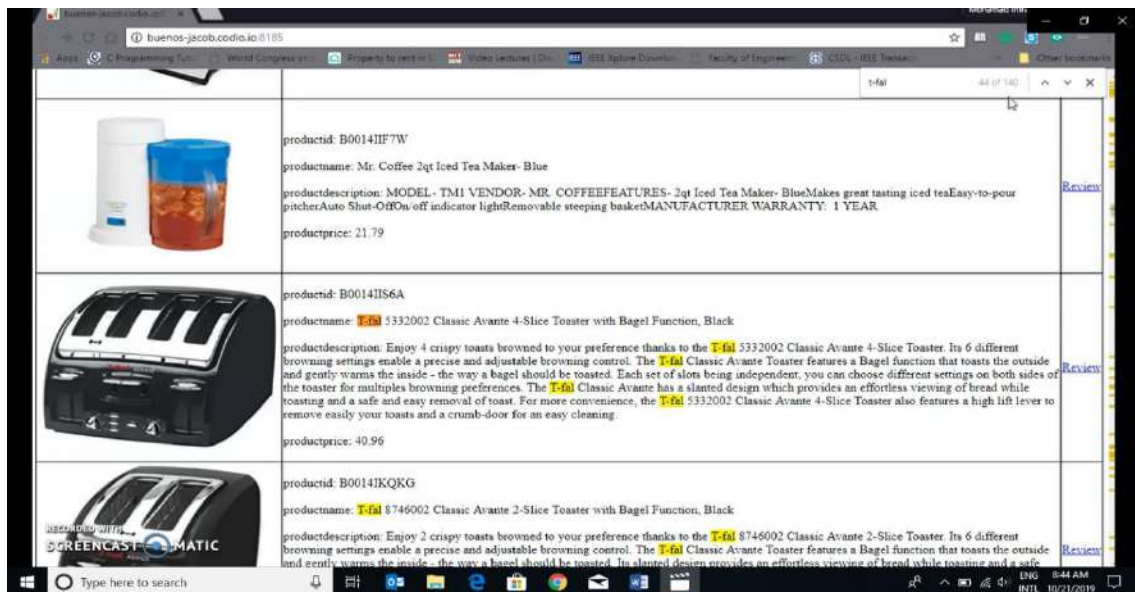
Figure 124 shows a screenshot of a participant who search product by product brands

The following figure shows a screenshot of a participant who opened reviews in other tabs
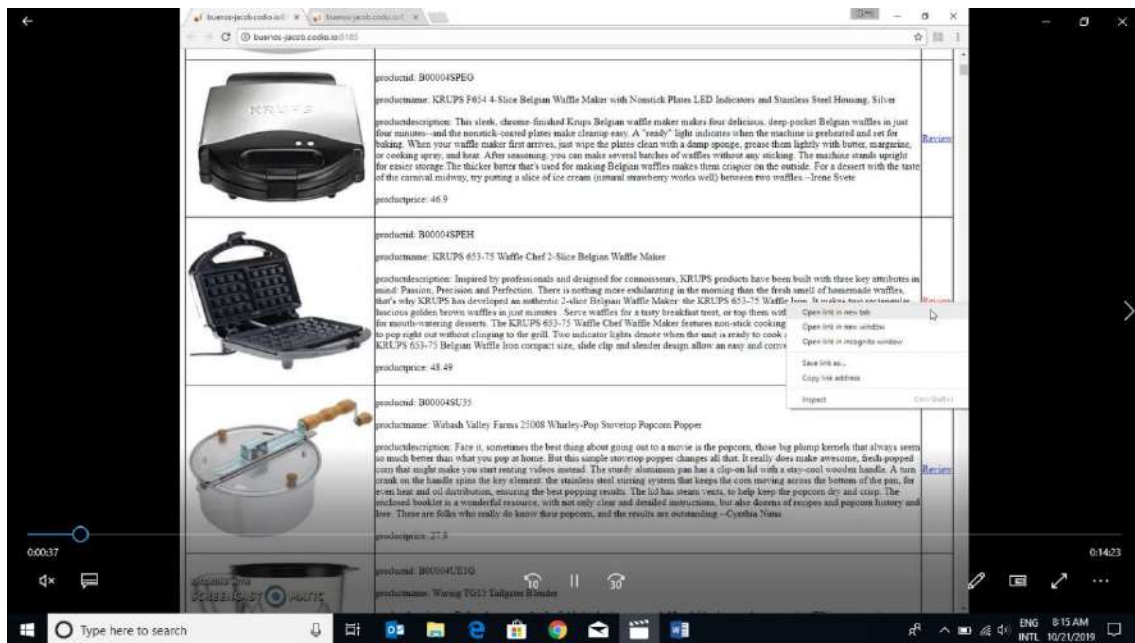
Figure 125 shows a screenshot of a participant who opened reviews in other tabs

The following figure shows a screenshot of a participant who scrolled down the product list

Figure 126 shows a screenshot of a participant who scrolled down the product list.

The following figure shows a screenshot of a participant who viewed Recommendation reviews page
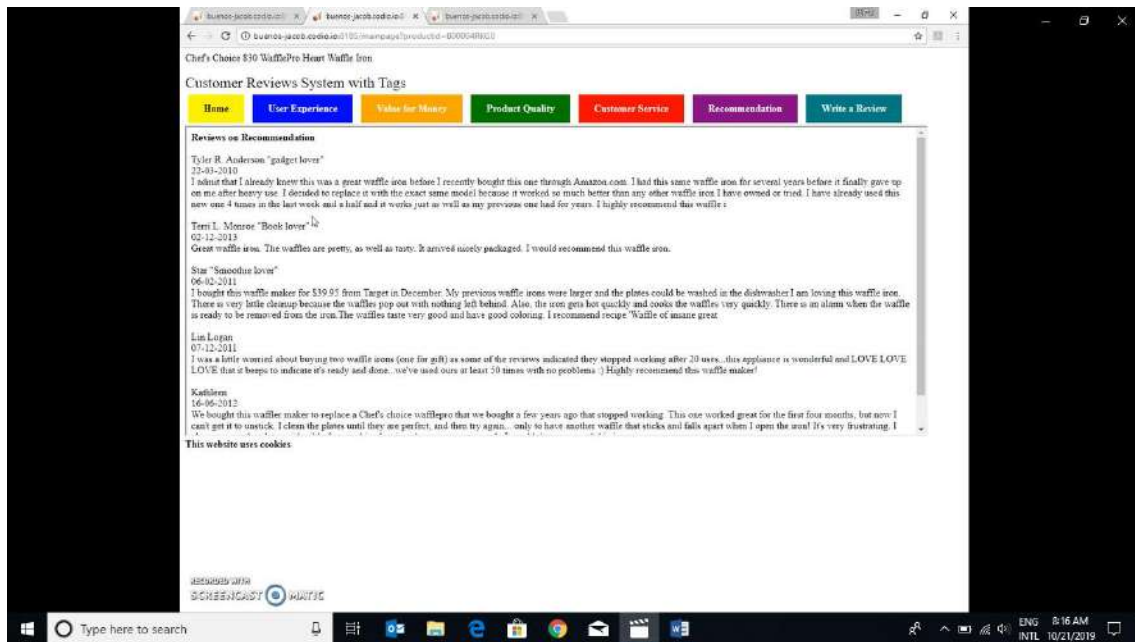
Figure 127 shows a screenshot of a participant who viewed Recommendation reviews page

The following figure shows a screenshot of a participant who viewed Value for Money reviews page
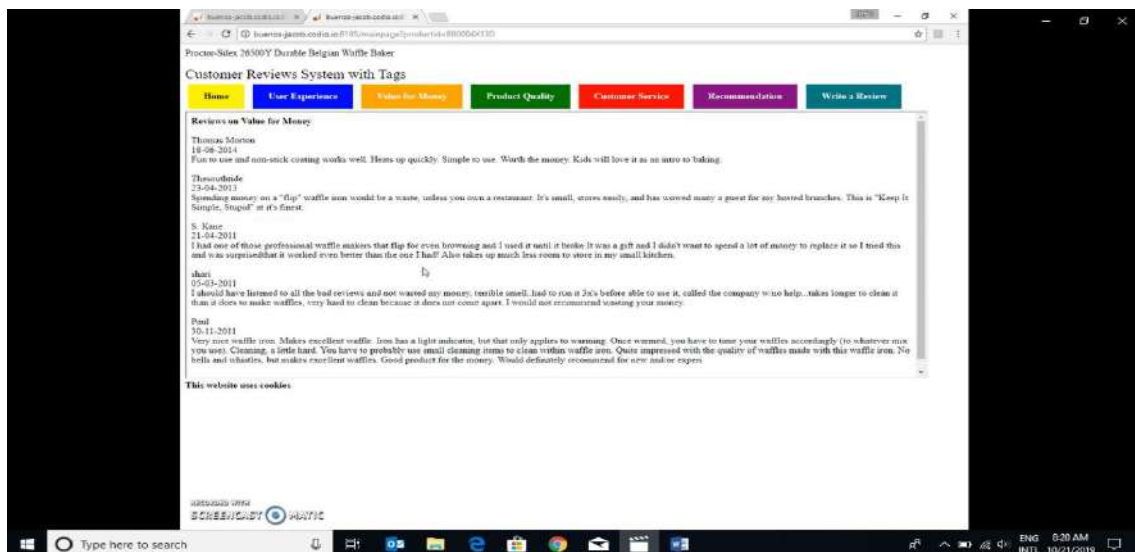
Figure 128 shows a screenshot of a participant who viewed Value for Money page

The following figure shows a screenshot of a participant who ticked the tags first before writing up reviews
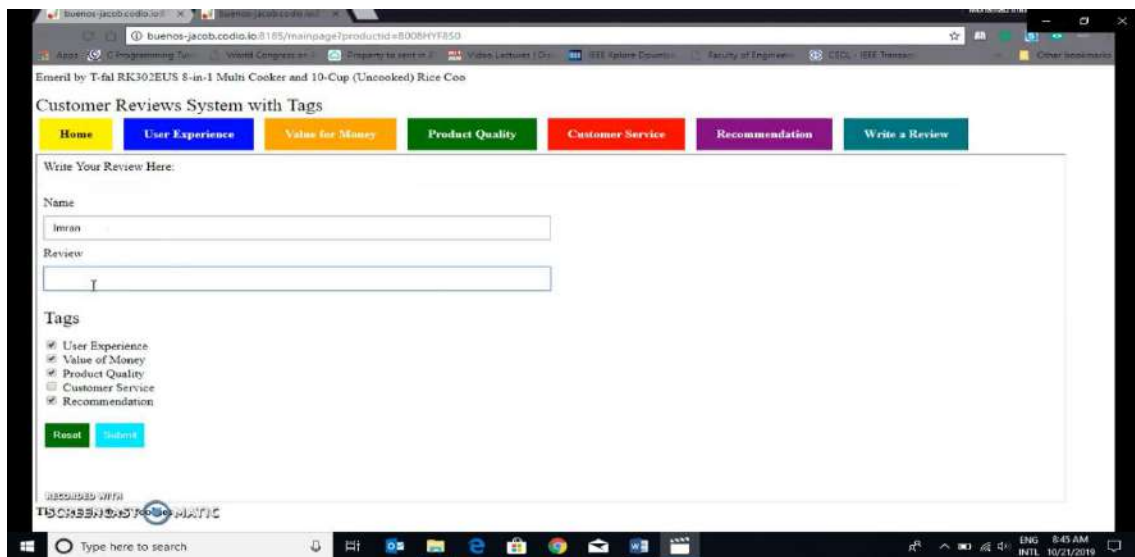
Figure 129 shows a screenshot of a participant who ticked tag first before writing up reviews

The following figure shows a screenshot of a participant who wrote reviews after done tagging first
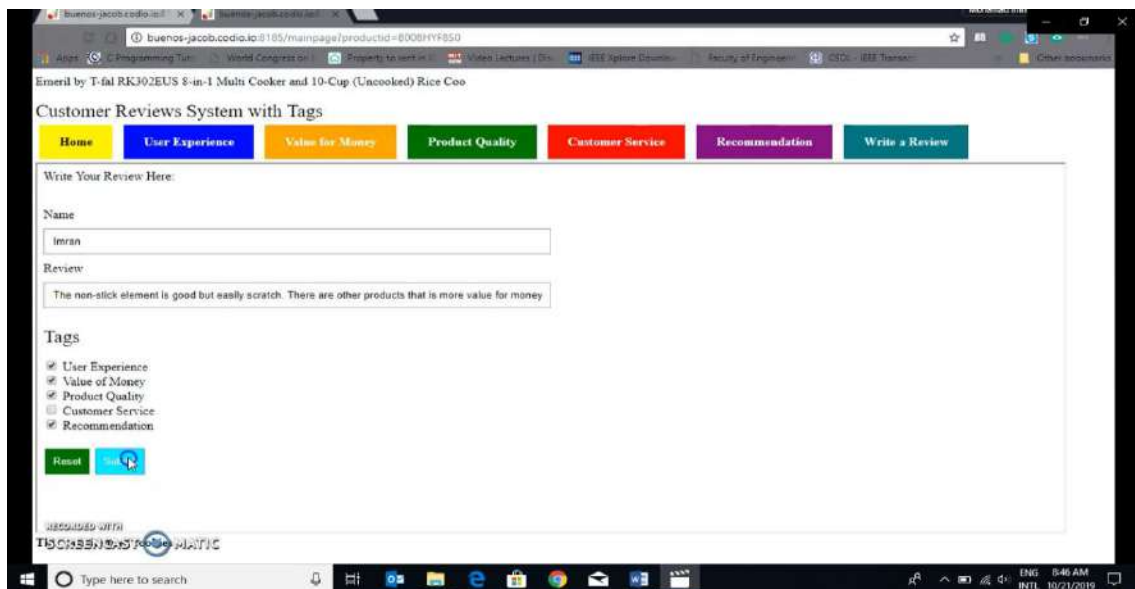
Figure 130 shows a screenshot of a participant who wrote reviews after clicked on tags

The following figure shows a screenshot of a system message mentioned that the review was written has been added into the system
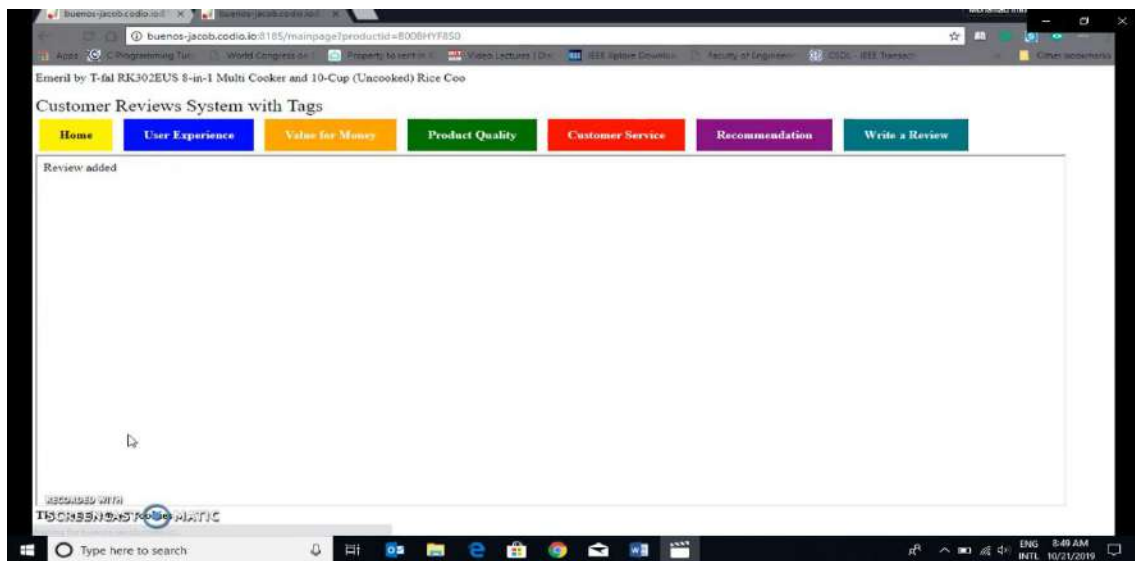
Figure 131 shows a screenshot of a message from the system stating that a review has been added.

The following figure shows a screenshot of a participant who wrote up reviews first before ticked the tags
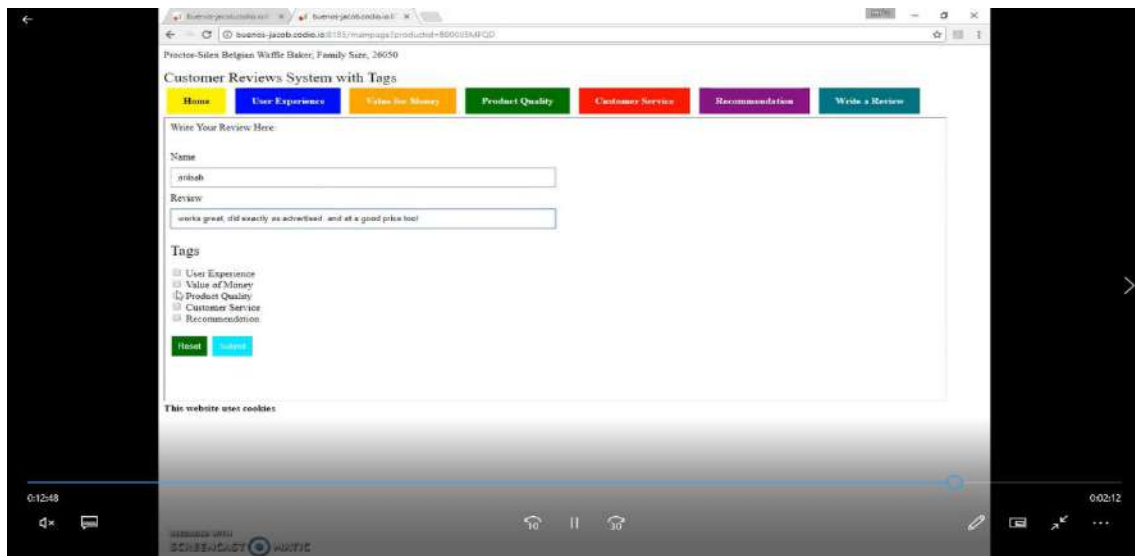
Figure 132 shows a screenshot of a participant who writes review first before clicked the tags

The following figure shows a screenshot of a participant who tagged reviews to two tags after done written reviews.
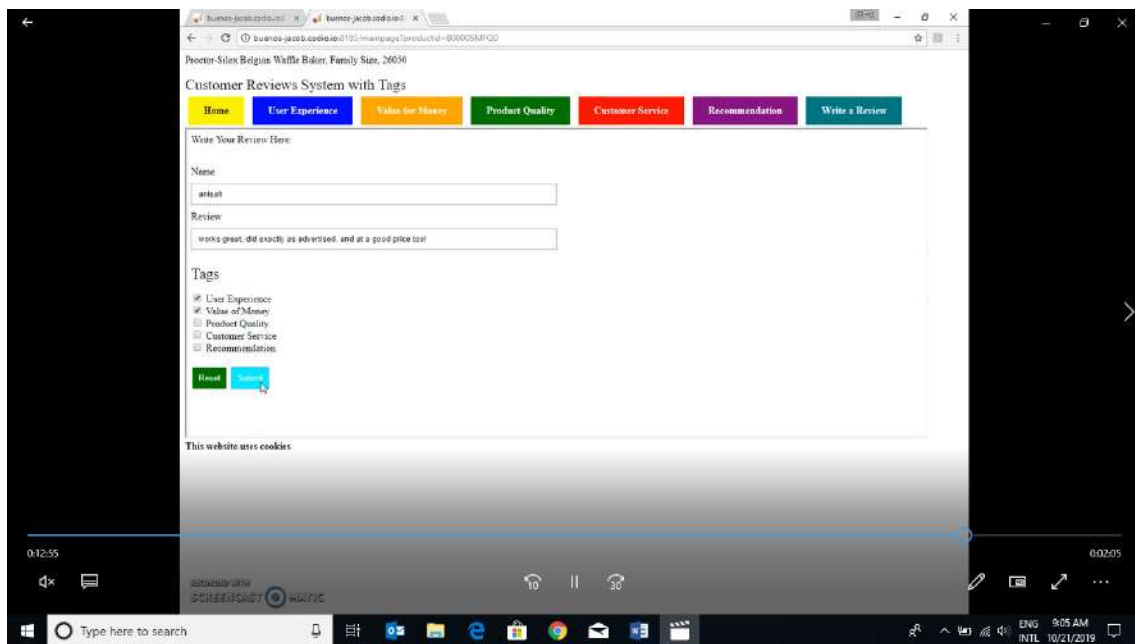
Figure 134 shows a screenshot of a participant who clicked on two tags

The following figure shows a screenshot of a participant who viewed own review in the Value for Money page tagged.
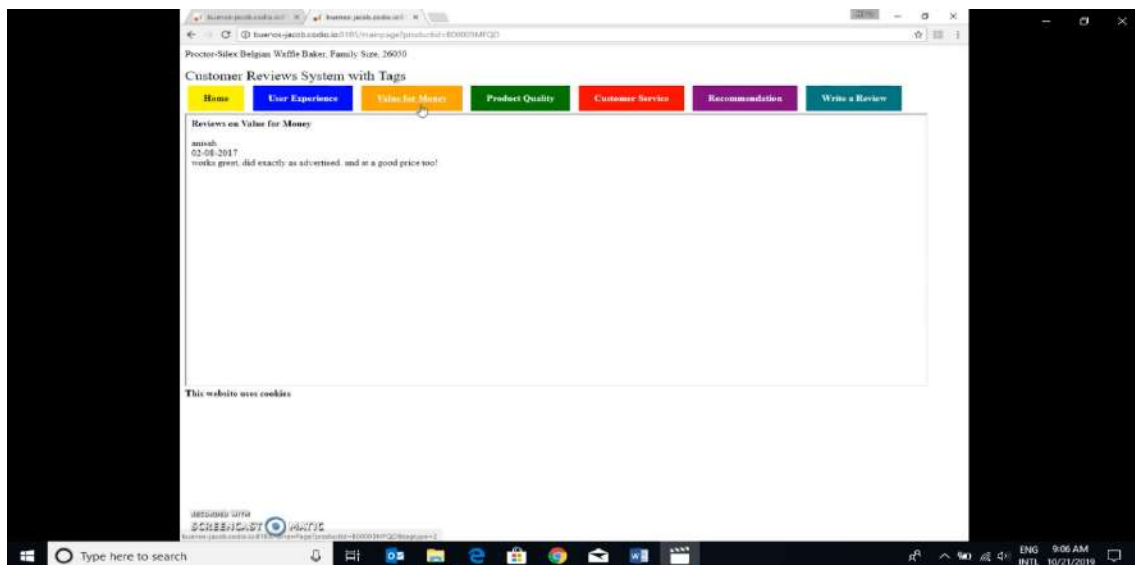
Figure 135 shows a screenshot of a participant who viewed the page where the reviews tagged to.

The following figure shows a screenshot of a participant who viewed own review in the User Experience page tagged.
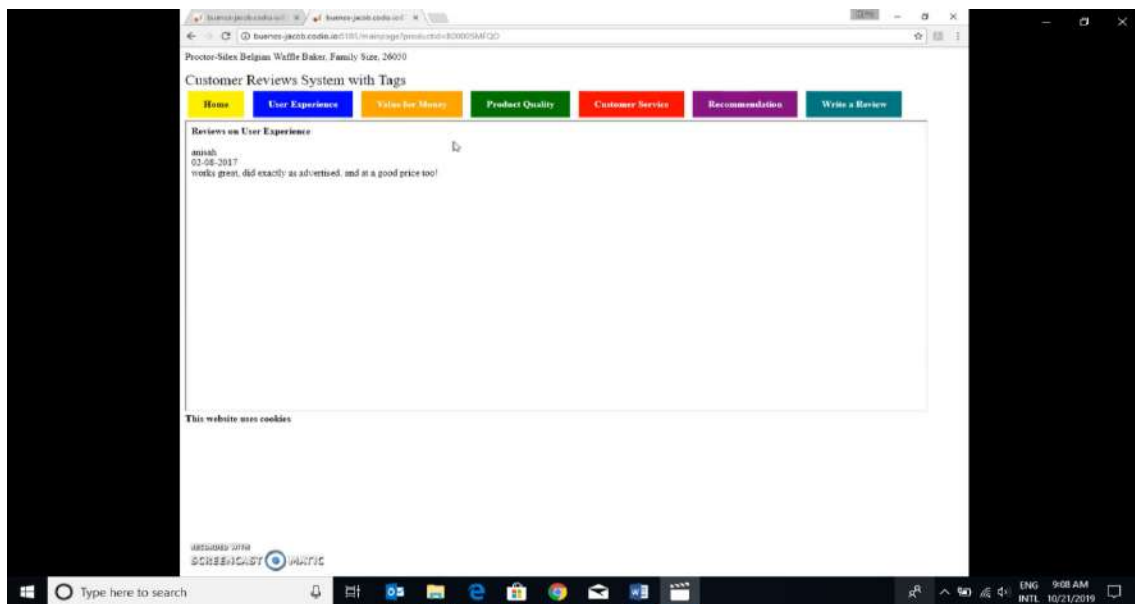
Figure 136 shows a screenshot of a participant who viewed the page where the reviews tagged to.

The following figure shows a screenshot of a participant who clicked on the Submit button after done written a review.
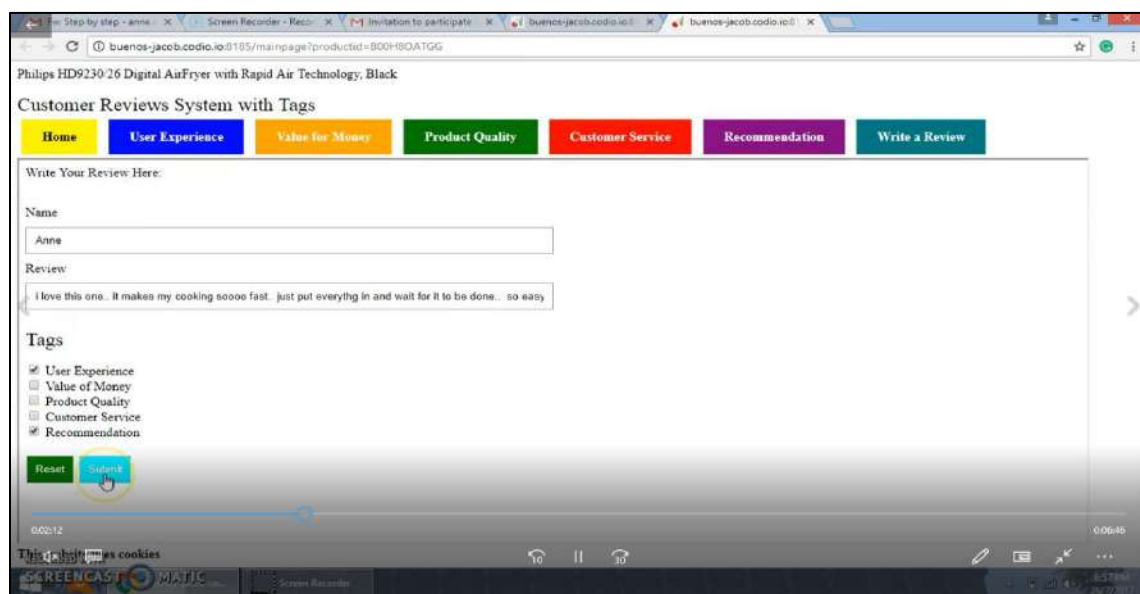
Figure 137 shows a screenshot of a participant who clicked on the Submit button.

300

The following figure shows a screenshot of a participant who selected 'write a review' button.
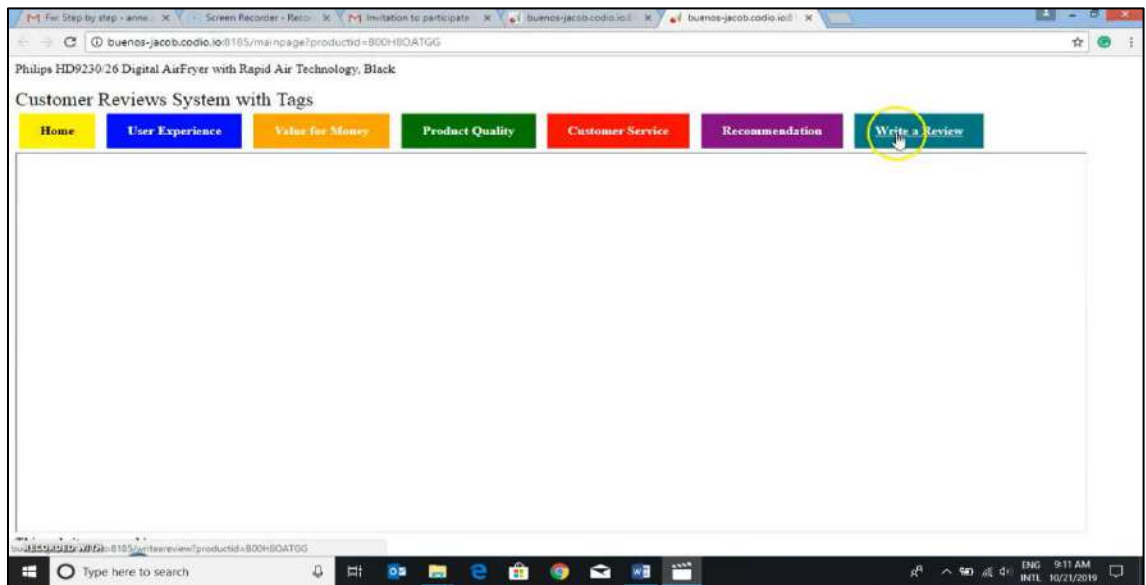
Figure 138 shows a screenshot of a participant who clicked on Write a Review button.

7.7.2 Summary of Video Observation Analysis

In this section, further analysis based on the video observation will be outlined. The analysis results are based on the observation of thirty (30) videos that included both read and write review actions. Based on the observation, the researcher has developed a few navigation or visit pattern by all the participants. Besides, from the observation too, the tags that most and least used were also discovered. Furthermore, the style of writing and selecting reviews was also noted during the observation. Other than that, the behaviours of participants in viewing products' description and product search also obtainable in the upcoming section. The analysis summary will be presented in the point form for clearer understanding of patterns that emerged regarding the behaviours of real users (the participants) who willingly explored the Tags and Tagging concept in CRP online system to figure out a new method of finding, selecting and sharing customer reviews. Afterwards, the section of interview analysis will come up to further support the video observation analysis.

The findings based on the observation of video recordings resulted in four (4) categories of patterns. The patterns are;

- The most referred tags
- The ways users select tags and retrieved reviews

- The most tagged tags
- The ways users tagging reviews to tags

The following tables illustrated the examples of how the observation data being noted, recorded and analysed based on the logs report and patterns of using the system by the users. The number of products in the table was based on the findings, which showed the maximum numbers of products a user picked in the recordings is five (5). For each of the pattern, the summaries of findings were presented to give an initial picture of how the users use the Online Customer Review System with Tags. The next section will tell more about the results of the interviews made to the users. The average percentage and average numbers of users were used as the calculation method because there involved a different number of products viewed by the users. Hence, presenting the data in average mode is best to describe the patterns developed by the user participants and establish an understanding of those patterns.

- The Most Referred Tags

Table 3.0: The Matrix of the Most Referred Tags

USERS	MOST REFERRED TAGS	PRODUCTS				
User 1	USER EXPERIENCE					
	VALUE OF MONEY					
	PRODUCT QUALITY					
	CUSTOMER SERVICE					
	RECOMMENDATION					

This pattern shows the most referred tags by the users. The table above was part of the whole matrix table used to record and analysed the observation data on this pattern of use. The results recorded demonstrated that out of the total numbers of the participants, thirty (30), there is a portion of average percentage and an average number of users on each tag represent the popularity of the tags.

Based on the average calculations, the results indicated that the top four (4) who scored the most referred tags are; Value of Money, Product Quality, User Experience and Recommendation with more than twenty (20) average number of users from thirty (30) total numbers of respondents and above 65% of average percentage scores. This result shows that most of the user participants were referring to Value of Money, Product Quality, User Experience and Recommendation tags while using the online customer reviews system. This result was somehow reflecting the user studies conducted in the earlier phase, which also indicated the same dimensions of information as in here, the evaluation process.

Table 3.1: The Matrix of the Most Referred Tags Scores

Tags	Average Percentage %	Average Number of Users
USER EXPERIENCE	66	20
VALUE OF MONEY	75	23
PRODUCT QUALITY	68	21
CUSTOMER SERVICE	45	14
RECOMMENDATION	65	20

- The Ways Users Select Tags and Retrieve Reviews

Table 3.2: The Matrix of the Ways to Select and Read Tags

USERS	Ways Read and Select Tags	PRODUCTS				
User 1	From Left to Right					
	From Right to Left					
	Selected Specific Tags					
	Randomly Picked Tags					

The above table shows the matrix of the ways the users select tags and retrieved the reviews. There are four ways noticed done by the user participants; from left to right, from right to left, select specific tags and randomly select tags. The following table presented the scores of the average percentage and average numbers of users in each way. Based on the average percentage and numbers of users scores, there were two (2) most significant ways of the users select and read tags; from left to right and selected specific tags. As for the other two ways were less done by the users where the scores of average percentage are around 35% to 40%, which means only an average of 11 to 12 users were reading and selecting the tags from left to right and randomly selecting tags. This result shows that mostly the users opened each tag of the reviews started from the first tag, the User Experience to the last tag, the Recommendation Tag. While to another significant set of users were seemed to select precisely which tags to be opened.

The scores of the average percentage are above 68%, and the numbers of users are above twenty (20) users. The rough idea developed from the scores below indicated that the users have two patterns; selected and browsed all reviews in all tags to explore the system and the users knew exactly what information they were looking for in the customer reviews.

Table 3.3: The Matrix of the Ways to Select and Read Tags Scores

Tags	Average Percentage %	Average Number of Users
From Left to Right	68	20
From Right to Left	35	11
Selected Specific Tags	70	21
Randomly Picked Tags	40	12

- Most Tagged Tags

Table 3.4: The Matrix of the Most Tagged Tags

USERS	MOST TAGGED TAGS	PRODUCTS				
User 1	USER EXPERIENCE					
	VALUE OF MONEY					
	PRODUCT QUALITY					
	CUSTOMER SERVICE					
	RECOMMENDATION					

The above table of the matrix was used to record the pattern of most tagged tags by the user participants. This pattern interpreted the ways the users tagged their reviews after writing them in the system. The participants were not only allowed to retrieve reviews using tags, but also allowed to write reviews based on the products that they already bought, used and available at their house, and then tag the reviews to the set of tags provided. The actions here were assessing the user intelligence in terms of tagging their reviews to the right tags. The level of understanding by the users regarding the different tags, which has a different scope of information, was also assessed.

Based on the score in the table below, it indicated that the users tagged their reviews the most at the four (4) tags; Value of Money, Product Quality, Recommendation and User Experience. The average percentage scores were above 65%, and the average numbers of users are twenty (20) and more. This pattern result specified that the four most tagged tags were the most basic information that people shared in their reviews of products. While the Customer Service Tag, which is less popular and less tagged has recorded slightly lower numbers of people using it; however, there were still being used but not that often as the other four tags.

Table 3.5: The Matrix of the Most Tagged Tags Scores

Tags	Average Percentage %	Average Number of Users
USER EXPERIENCE	67	22
VALUE OF MONEY	78	23
PRODUCT QUALITY	68	20
CUSTOMER SERVICE	50	15
RECOMMENDATION	65	20

- The Ways Users Tagging Reviews to Tags

Table 3.6: The Matrix of Ways to Tagging Reviews

USERS	Ways of Tagging Reviews	PRODUCTS				
User 1	Tagged reviews explicitly					
	Randomly tagged reviews					
	Tagged to all Tags					
	Tagged to one Tag only					

This is the last pattern developed by the users' reactions when using the online customer reviews system with tags developed by this study. Again same like the rest, the table shown above is part of the matrix table used for recording the observation note about the ways the users tag the reviews to the set of tags. After writing a review, the users need to tag their reviews to the tags; else the reviews could not be submitted. By doing this, the concept indirectly encouraged the user to use their intelligence and general understanding in terms of deciding which tags to be tagged. Each of the tags has a distinct scope of information, and the observation has proven that most of the users seemed understood on which tags to be used to be tagged to their reviews. The reviews tagged to the tags are most appropriate and suitable too. Based on the results shown on the table below, it has represented and specifying that there

was one way that the user used the most in terms of tagging their reviews to the designated tags; tagged the reviews explicitly. This is a good result as it is indicating the understanding of users toward the tags developed. It also means that the users manage to differentiate the scope of each tag; the other three ways of tagging tags scored low because that was not likely the user of this evaluation study explicitly would do.

Table 3.7: The Matrix of the Ways to Tagging Reviews Scores

Tags	Average Percentage %	Average Number of Users
Tagged reviews explicitly	80	20
Randomly tagged reviews	7	2
Tagged to all Tags	7	2
Tagged to one Tag only	3	1

7.7.3 The Interview Data Analysis

Based on the observation and interviews with the participants, this section will present the interview data analysis on the users' reactions toward using the online version customer reviews prototype system with tags. The data was analysed using the NVivo software, and there are few new nodes or codes were produced during the analysis. There are two dimensions of user evaluation data here which are; the way users **read reviews** and the way users **write reviews**.

In the first dimension; the ways the users read reviews were by selecting the tags before the tag page displays the reviews. There are two primary nodes or codes developed based on the TAM framework; the Ease of Use and the Usefulness. The two primary constructs were used as the keys to describe user acceptance towards using the Tags and Tagging concept in the online customer review system. On this User Evaluation Phase 2, the constructs used were no longer stated as perceived ease of use and perceived useful because the setting of the evaluation was real and the users have really used the system on the self-willingness and according to their self-needs. Hence, the interview was about seeking for their real responses toward the real use of the online customer reviews with tags system.

At first, the study intended to ask a specific question mentioning the word Easy To Use (Ease Of use) and Useful (Usefulness). However, the plan was changed to avoid leading answers of the users. Thus, the study decided to ask a general question focusing on the change experience of the users without mentions of the TAM constructs. The question used in this section is ***"How does the use of the concept of the tag in online customer review systems change the way to find and read reviews?"*** This question allows the users to elaborate as long as they like to share their **change experience** but specifically in terms of finding or read reviews. By doing this, the choices of codes for the data analysis would be more comprehensive and not limited to the two codes only. The following are the nodes or codes generated by the participants' responses; **more comfortable to find information, provide useful information and save more time**

- **Easier to find information**

    Easier to use is one of the principal codes directly mentioned several times by the respondents. The majority of the users deliberately shared and explained their experience of using the system as easy to use. The further details of the responses are as follows;

    Keywords; **easier to use, straight-forward/ straight-away, simpler**

    Below is one example of where the participant mentioned how she could find the information about the customer service **straight-away**;

    "The experience of using this review system is different from other reviews system of products that I have ever used. The concept is amazing because I can find the information that I looked for. For example, in my video, I was looking for a high-performance kitchen aid mixer. Then I found two colours from the system. Both have similar information on the tags displayed. I was looking for information in the customer service on how their services to the problems of customers. You know, using an expensive mixer like this will always need technical support. What I found out, the previous buyers said the service offered to the customers is a life support. Even you come for service after 20 years; they still can do it for you. This good maintenance practice helps the buyer to keep their mixer in good condition for such a long time.

*Means, I don't have to buy a new one, just keep servicing when the time is up. The information on customer service is excellent for me to hear, and I even glad when **I can** straight away **found the information from this tag**, **Customer Service tag**. I'm really impressed. This system works so well in my opinion" (Online shopper 4)*

The other response appeared that mentioned **straight-forward** keyword to describe his process of retrieving reviews using the system prototype with tags.

*"I like things that are direct and straight-forward. At first, I feel curious when I first saw this system concept. Why there were so many tags? However, as I scrolled and selected one by one tag, **I started to feel that this system is easy to use because the tags are** straight-forward **in terms of describing what the reviews inside are about.** Although there are mixed of other contents to at least the tags represent one point in the reviews. That is what I like about the system. Truly easy and* straight-forward*".*

(Online shopper 21)

Then the other response came up and was mentioning and elaborating how **easier to use** the system of reviews with tags is.

*"What I like about the review system is because of the tags. The tags are well explained about the content of the reviews in their respective pages. To me, I honestly found it is easy, especially for an impatient person like me but need to read reviews before I shop online. I was planning to buy an air fryer, brand Philips and Tefal for my sister's wedding present. Both are big brands, but I find a bit hard to decide which one to get. I tried going on the reviews from the Value of Money tag. It turned out that Philip's is a bit cheaper than Tefal's, but of course many said it worth the money on both brands. So I looked into the Product Quality tag. Then I found most people reviewed good and excellent quality on both. The later I picked User Experience tag, the contents of both brands have lots of difference. I found out that using Philips brand air fryer is simpler and easier because the button functions are minimal so less complicated. So, at last, I decided to go on buying the Philips brand. What more goodness was the item is on sale in Argos now, and I just got it yesterday. **What I can conclude is, the tags make***

the system *easier to use* *for me to reach every kind of information from other users*
with a single click on the tags."

<div align="right">*(Online shopper 15)*</div>

Further is a response from one of the participants whom favourably said the system is
simpler to use. The user has explained a long story of her experience on using the
customer reviews system with tags.

"Oh, about my experience using this system? I like it, and really, I like it. I prefer
detailed reviews and do not mind at all to go through bunches of reviews because I
like my decision to buy something is really worthy. But I admit it was not that simple
and tiresome. My point is, I still can get detailed reviews, but this time, I can save lots
of searching time. I found the review in this system is much organised. I mean you go
to Value of Money tag, the reviews got the points of value for money. Easy to spot on.
I felt it was a bit quick for me when I went through the reviews. ***Unlike the last times,***
I felt the time was taken so long until I felt satisfied with what I know. So, this system.
Yeah, it got tags, and the tags are easy and *simpler to use*. *What else is good? Oh*
yeah, the number of tags and the colour-coded used are very minimal yet interactive
enough. After all, using this system is easy, not complicated at all, save time and the
best part, it's not tiresome!"

<div align="right">*(Online shopper 16)*</div>

- **Provide Useful information**

  So now the chapter moves to another code which is Usefulness or Useful, and both
  have the same meaning. The following are the quotes from the users mentioning the
  keywords that mean useful or usefulness, whether directly or indirectly.

  "When I shop online, it is my habit to go through the customer reviews first, because
  I want to know lots of things. Things that only the previous users know about, for
  example, their experience of using the product. I rather believe in customer reviews
  because they are genuine. I find it helpful when I do not know much about the product.
  Here in the UK, the culture os shopping here is via online. So easy to shop online. But
  buying online did not allow me to see physically and touch it by myself. So here, my
  habit developed. So, I need to get anything useful from the reviews. In this system,

usually tags only got rating but no reviews specific on it, but this system does. That is what I found useful too when I got on one tag, and I opened it, then read the content, then I found lots of information in it, useful information. Not found anywhere in the description section but here. So this is where I found these tags work wonder. **Because the tags helped** *to provide useful information* **to guide the review readers to absorb relevant information on preferences.** *As for me, I like to know firstly about the quality, then value of money and lastly the recommendation. To me, if the products got so many recommendations, it means the product is good. Besides, there were details in the recommendation reviews section.* **That is where too, I found the** *useful information* **because I could know the justification of their recommendations.** *That is what my experience was when using this system".*

<div align="center">

(Online shopper 2)

</div>

Then some of the users too, often found the concept of this tag is useful when it comes to making a recommendation to friends, families and parents about what items should they buy. For example this one user, usually, according to him, he was the one who needs to read reviews and make product study for the parents, but this time, he can lead the parents to use the system by themselves. Because it is easy to use and the information in the customer reviews are found useful for the reference.

"I introduced this system to my parents, they like to shop online these days, especially during the festive season, mom loves to but kitchen products as a gift to her girlfriends. **So when my mom and dad first use the system, they said it is a very** *useful reference* **and easy to use because the interface is simple, and contents are specific and not like other systems where the reviews look so long like a fiction novel.** *They have been onto it for several times until the products they aimed to buy are done purchased."* (Online shopper 23)

Other than that the users also have stated that the tags system is found useful because then tags contained relevant information which means, when the users click on any of the tags, it will lead the user to a set of relevant customer reviews where she can refer to.

"I could not agree more about this system is so relevant because it *contained useful reviews* *to me when I want to find relevant reviews to my preferences. Although there are tags that categorised the contents, the tags are not too many and still within my reach.* I mean, there is not too much I need to go through. Besides, I select to what I want to know at the moment, for example, I was looking for a new food processor, I was focusing on the product quality because I had a few already before the new one is broken. There were two brands tried and this time, and I want to buy a very good one, sturdy and durable for heavy use. So money is not the top priority but the quality. When I saw there is a Product Quality tag, I was a bit happy that I could find out more about the quality in my selection of brands. After all, it's the concept of structuring the reviews according to tags which I find it is so useful for me".*

(Online shopper 8)

- **Save more time**

  The other change that the users have experienced when using this customer reviews system with tags is, it saves more time. Thus, the following are some examples of a user claiming that the concept of the tag makes them save more time in finding information in customer reviews.

  "I definitely feel so comfortable when trying this system for the first time. I need to find some reviews about what people recommend on the processor Kitchen Aid series. The series has mixer, grinder, blender and food processor. This product is top-rated at the moment because the product is one for all. You bought the mixer, but you also get grinder, blender and processor together attached in one mixer body machine. So I was intrigued to know what people recommend to this product. Sometimes when there are so many attachments on a single machine could lead to a shorter life span or easily got broken, right? So that is what I want to see whether if the product is good or vice versa. **Using the Recommendation tag, I straight away found all justifications of the recommendations. It really** **saves more time** **to know much instead of going one by one long review with luck and no luck to find the information I look for. Like other recommendation feature, usually, they are in the form of rating and thumbs up or down. No justification but this system got that.** *It is really different yet very useful.*

And since I got so much time spare, I was opening all other tags too just to have a look at how the contents were."   (Online shopper19)

*"**I strongly feel that using this system** saves me more time. **No longer process is needed, and I quickly got the information I wanted to get** Because I don't need to open all reviews and simply select what tag and what reviews I want to read so be it.." (Online shopper 10)*

Next is the data analysis on the users' responses in another dimension, the ways the users write reviews using the tags and tagging concept system. The evaluation focus was the experience of the users regarding the 'changes' of ways the online shoppers write reviews. The general question used for evaluating this dimension is ***"How does the use of Tags and Tagging concept change the way you write your reviews?"*** There were a few 'in-vivo' codes or themes generated from the participants' responses based on the above question presented as the following. The quotes below are among the users' responses about their **change experience** on writing a review for a product using the tags system.

- **Interesting**

    This point is among the popular term expressed by the users in this evaluation process. The introduction of the system customer reviews that used the Tags and Tagging concept to organise and present online customer reviews.

    The tags concept is an interesting approach to categorised written reviews from the users.

    *"This is an **interesting** way to put my review on the kitchen product, Zojirushi Rice Cooker. I wrote on how good the rice cooker was because I still use it even it is already ten years old and also how worthy it was to be bought on a higher price than Pensonic brand but remain strong until today. Then I tagged my review to Product Quality tag and Value for Money tag. I have never done like this before, and it made me feel a bit exciting."*

    (Online shopper 10)

313

Then, the concept of this tag is also an exciting approach to encourage users' intelligence by requiring the user to tag their written reviews. It indirectly encouraged the users to think about the suitable tags for their reviews before posting it into the system

*"Even I had to do an additional task when posting product reviews, and it was actually an **interesting** approach that let the users think about the suitable tags first before tagging then posting the reviews. As for myself, last time I simply write and post afterwards without thinking much, but using this system, it made me think a bit before posting and ensure what I wrote in the reviews are relevant and useful to the existing tags."*

(Online shopper 8)

- **Organised**

There is a good point of organised reviews from the users themselves where the concept of the tag also created a new systematic approach on putting the suitable reviews on the suitable categories or tags.

*"All right, this method is actually good, you know, it created a new systematic approach for the users like me to be careful on putting my reviews on the suitable tags. This is because, it will be good if we can put our reviews on the relevant tags because we as readers too, rather prefer if the reviews are **organised** and really be at the tags where it supposed to be"*

(Online shopper 22)

Not only that, but the concept of the tag has also encouraged the users to be more organised in terms of planning what to write in the reviews. This is because the users will carefully draft their reviews and only put relevant points to avoid the reviews being too long with a less relevant and robust point on it.

*"Having this approach of tags to classify our own reviews is undoubtedly beneficial because it requires the users to plan on what to put in the review writing properly. And then, it makes the reviewers being careful, and I need to be careful when writing a review. Make sure it is **organised** and contained relevant points to the tags."*

(Online shopper 19)

- **Responsible**

Lastly, the concept of this newly introduced tag made the users feel more responsible of what the users organised the opinions in their reviews and check before posting that there are no sensitive points of view such as violent, cursing and so forth because there are no such tags for those things.

*"I found the concept of tags and tagging is brilliant because it can prevent the users from putting sensitive points in their reviews and the users need to organised the reviews into a positive manner despite the reviews would sounds complaining. I always hate to see such violent point in the reviews because it will create anger and all that I can say is, trying this approach to write a review makes me more r**esponsible** when putting words into my reviews."*

(Online shopper 7)

- **Difficult**

Despite all the excellent change experience, the users talked about in the above, and there are two (2) users who did not like the idea of the concept of this tag because it was difficult for them to understand the tags and its scope.

"I am not really into this new approach of writing reviews because I find it difficult to understand the tags this system has. To me, everything is about the user experience, so I don't understand why there are many other tags."

(Online shopper 11)

Not only challenging in terms of understanding the tags but also in terms of time taken and procedure involved.

315

"I personally think that this concept of tags and tagging the reviews is a waste of time. The reviewers always need to stop for a while after writing a review, inclusive me and think for a while what tags are relevant to my reviews. So I did not use the write review feature in the system. I was just browsing and utilised the functions of the tags to select reviews. That is all".

(Online shopper 27)

7.8 Limitation of the study

Like other studies, this user evaluation Phase 2 also encounter some limitation of studies. Firstly, regarding the sample of participants. There is thirty (30) participant involved where majority of them are Malaysians and only two (2) are from other countries. Thus, the result only reflected in a single view of online shoppers from Malaysia and lack of varieties. Besides, more than half of the number of participants in User Evaluation Phase 2 also involved in User Evaluation Phase 1. However, this study viewed the matter as an advantage due to their willingness and curiosity to explore the new concept of utilising customer reviews as adopted in the CRP system.

Even though *bias* has been detected where the participants of this study are consists of acquaintances of the researcher, but the study still received participants who are not known directly to the researcher, but rather as acquaintances of other acquaintances. This happened when the researcher also allowed the links to be shared and spread as much as possible to reach a high probability of participation. The rationale behind the decision was due to the requirement of this qualitative base evaluation, which is thirty (30) the optimum sample size.

7.9 Summary of Section

This chapter has presented the results and findings of the User Evaluation Phase 2, where it involved two types of data sources; the observation and logging records, and the video recordings and interview data. The results of the evaluation have been acquired and analysed to interpret some meanings of each of the result findings. This thesis is now moving further to the next important chapter, which is the Discussion chapter to interpret further, understand, discuss and reasoning the findings of this study.

Chapter 8

Discussion

8.1 Introduction

This chapter presents a thorough discussion of the findings and results from all user studies and evaluation processes conducted throughout this research. The discussions are meant to indicate how far the findings have supported the research question. Other than that, the discussion will also triangulate the empirical evidence gathered from all the research user studies with literature findings. In overall, the findings of this study add further evidence to the current literature on how the online customer reviews support the online purchasing experience. Before continuing, let's us recall the aim of the study, which is **to investigate the key information dimensions in customer reviews and develop a conceptual prototype for analysing and organising customer reviews.** Therefore, the findings of this study must first achieve the aim of the research, accomplish all the objectives set and finally discuss how the findings answered the research question, **'How can analysing and organising customer reviews support the online purchasing experience?'**

The discussion begins with results from the first phase of a user study which was the exploratory study and technology review. The findings must be supported with literature to strengthen the need of this online customer reviews study to be continued. Next is to discuss the findings of the Primary Research, which also shall be supported with the literature. The next section will further discuss the findings in the system user evaluation on both Phase 1 and Phase 2. The findings, also, will need to be supported with literature evidence for data triangulation purpose besides providing further underlying reasons behind the findings gathered during the evaluation process. The discussion also involves the selection of TAM as the evaluation framework and the development of the Tags and Tagging concept. Lastly, the discussion will end the chapter by providing the input regarding the study limitations encountered, the value and contributions of knowledge and the opportunities of future work that opens to a possible extension of this study.

8.2 Discussion of Findings in Exploratory Study

The first user study of this research was about exploring the importance of customer reviews in the online shopping activity and how does these reviews influence the decision making of online purchasers.

Based on the findings, online customer reviews are involved in online shopping activity, and has a significant influence on the decision making the process of online shoppers. The results of this exploratory study have been summarised and conclude that the online customer reviews can be empirically ranked as the second most influencing factor of online purchasing.

The ranking of factors that influence online purchases based on the calculation of the above scores is as follows:

1- Price of a product
2- Online Customer reviews
3- Product information
4- Delivery charges
5- Trusted seller
6- Trusted brand

These results indicate that customer reviews have become the second most important factor influencing the decision making of online shoppers. Sixty percent (60 %) of the respondents said they use customer reviews as a reference to know more about the product and to make a general evaluation on product value: lowering the shopping risk and measuring spending worthiness based on experiences of other customers.

According to Liu et al. (2011), the customer review is user-generated content (UGC) important factor that influences the online shopper decision making. Thus, this research found that the findings of the exploratory study have empirically supported the literature stating that online customer reviews influence the decision of online purchases. The online customer reviews have contributed to the reasons for buying or not buying to the online shoppers (based on the online shoppers involved in the study).

The exploratory findings have also partially answered the research question ('How can analysing and organising customer reviews support the online purchasing experience?') by providing a small-

scaled evidence gathered from the exploratory studies; showing that, referring to, analysing, and evaluating the information within customer reviews has influenced the online purchase decision making and made the customer reviews, as the second most influential factor in the decision making process of online shopping activity. However, this exploratory study and its findings are not enough. Hence, the study needed a stronger and larger scale of study that could provide more evidence and findings to support the current literature regarding the influence of customer reviews toward an online purchasing decision. Below is the discussion on the primary research and its findings, done in response to the findings in the exploratory study.

8.3 Discussion of Findings in Primary Research

Ideally, we can see the evidence that the customer reviews have become the second most influential factor to the online purchasing process, but the question now is, how? Thus, this study has conducted two series of primary research; Primary Research Phase 1and Phase 2 with the respective aims and objectives, to further expands the research on exploring the ways the online shoppers used the online customer reviews in their online shopping activities. The main focus of the findings from the Primary Research series is to understand the involvement of online shoppers with online customer reviews in the online shopping activity. Then the Primary Research also aims to find out empirical evidence on the key information dimensions of the users' preferences when using the online customer reviews during the online shopping activity.

8.3.1 Online Customer Reviews as Major References and Key Influence on Online Purchasing Decision making, especially for First-time Buyers.

Still on the point of how the online customer reviews influence the online purchases decision but his time the scope is narrowed down to the first time buyers who were affected the most by the influence of the online customer reviews. According to Ha et al. (2012), sufficient information in product reviews by users is essential for customers and even more important for first-time buyers or customers as compared to existing buyers or customers. The empirical findings of the Primary Research have supported the literature. Based on the user ethnography study videos observation and interviews, the majority of the shoppers use customer reviews in their online shopping activity. The involvement of customer reviews is seen to play a part to the extent of aiding some of the respondents in deciding on their online

purchases. The findings not only supported the evidence from the literature, but also further support and strengthen the findings in an earlier user study, the Exploratory Study.

The following are the parts of empirical evidence showing how the customer reviews influenced first-time buyers.

Primary Research Evidence:

"As I am not familiar with the item, so that is why I looked at reviews as my main reference. If I already know what I want to buy, I will skip this step. Then if there is something that got my attention, and I never bought before so yeah I will go to review. "

(Online shopper 1)

There was also some evidence that showed the importance of customer reviews to the respondents where they seek to find reviews outside the shopping sites such as in blogs and YouTube to feel more confident before deciding to pursue purchasing.

"YouTube is one of my main sources of product review because I like watching rather than just reading them (review). It gives me a clearer insight into the products, and normally reviews tell more from the real experience of product usage and so forth". Products like make-up, handbag and cosmetics I usually use youtube to find video review and sometimes also for technological products."

(Online shopper 3)

Hence, the findings too, partially answered the research question, **'How can analysing and organising customer reviews support the online purchasing experience?',** by providing the evidence that the first time buyers or new customers have really got consulted and relied on the information in the customer reviews to help them make decision before their online purchases. Further, are the additional findings that supported the reason of why there are online shoppers who engaged and consulted the customer reviews in their online purchasing activity. The findings were discussed based on the elements found that resulted in the use of the online customer reviews as the primary reference, influencing factor and as an aid to the online purchases decision making.

"Well, this is my first time, so many kinds of information from the experience of other buyers are important for me to know of. For example, I could know about the baby carrier material quality, how different type of baby carrier gives impacts to the parents' body, which design is ergonomics and which not"

(Online shopper 1)

Another common factor that led to the use of customer reviews extensively in their online purchasing activity is that some of the respondents were also first-time parents. Standing in that state, their knowledge about baby products was very little, and not sufficient enough when guiding them to buy not only what was best for their babies, but also what and which products were more suitable. As they had no idea at all about the baby products, they found customer reviews to be a crucial and essential when guiding them in terms of recommending what best to buy: providing extra information on user experience insights and also as a medium to make comparisons of products by brands Little did we know, buying baby products sometimes giving quite an excellent tense to the parents because of the prices are not cheap, suitability to their babies are ambiguous and most importantly the risk of intolerances of the product to their babies. According to them, the customer reviews section is a vital part of finding information about baby products as well as a useful guide for first-time parents like them.

"Yes, reading customer reviews really depends on what type of product, and it's mostly on the electrical product and baby's product, you know I'm a first-time parent, so of course everything about baby stuff was my first time ever buying it that is why I read reviews. To me, it is easy to find the information we need from the reviews".

(Online shopper 39)

The interview analysis also showed that not only first-time parents but first-time users of particular products or brands also faced the same condition. Thus, that explained why customer reviews were involved in their online purchasing activity. Similar to the first-time parents, their reasons are alike, and customer reviews are crucially important as a guide to buying and also a platform to find more information about products primarily on the quality, user experience, and recommendation insights.

"I read the customer reviews if I have less knowledge about the seller or when I do not familiar with the product or brand. Mostly when I first time buying that particular brand or product. As for the tumbler, it is my first time buying from Marks and Spencer, and the same goes to snowsuit for my son, it is my first time as well, and I need to know more than what just provided in the product description, hence that is why I read customer reviews on those two items."

(Online shopper 6)

"Actually, I was looking for winter boots, I never bought winter boots before, and I'm interested in the UGG boots, but I do not have specific in mind what information to look for I just want to see what people say about UGG boots."

(Online shopper 8)

Based on the discussion of the findings from the primary research, what the research can conclude is that the reason this study has been able to triangulate and support that the customer reviews are really an influential factor to the online purchasing decision making process is because the group of participants in the primary research consisted of many first-time buyers or shoppers. It was either the first time buying a new product or the first time trying a new brand. That is why there is lots of evidence that shows that customer reviews were the primary reference and key influential factor in the online purchasing experience. The following discussion will tell more about the findings in the primary research.

8.3.2 There are 5 Key Information Dimensions found in the Primary Research

The points in the detailed explanation later will have clearly show us what type of information the respondents were looking for, have read, discovered or found out and gathered from customer reviews. All sort of information was not from the manufacturers, and all are totally from the perspective of real users, previous buyers, and the experts who have used or tested the products and also from trusted reviewers. The five types of information discovered from the analysis of the interviews as mentioned and explained by the respondents are actually what usually found in customer reviews; the user experience, quality of the product, customer service, value for money and recommendation. The interview analysis shows that the needs of different type of reviews are based on what type of product and preferences of the potential buyers or customers themselves. Some might need the information in reviews of all kind while some only wanted specific types.

There are five key dimensions of reviews information as identified through primary research indicating reasons people look into customer reviews; User Experience, Value for Money, Product Quality, Customer Service and Recommendations. According to Ye et al. (2014), the online customer reviews provide information on various aspects of products such as the user post-consumption experience, product quality, **value for money**, service quality and overall evaluation.

As we can see, there was a recent study (2014) which has quoted and mentioned all five dimension of information that makes people refer to the customer reviews just like the findings of the Primary Research. This is a good discussion point as this study discovered Ye et al. (2014) study after the Primary Research being conducted and its findings were analysed.

Hence, the following discussion details were structured by the types of information where it presented by the literature findings and how the Primary Research findings supported the respective literature details. The keys are presented one by one to indicate clearly the evidence gathered from both sources, literature reviews and user studies.

1. User Experience

    Based on the literature, according to Bronner et al. (2011), the consumers these days are willingly express their experiences concerning the use of products and services. Thus, the literature findings have been supported with the results of the Primary Research regarding the User Experience matter through the people's (online shoppers cum participants of Primary Research) say about it. Furthermore, it supported with another one literature finding which is from Xia and Bechwati (2008), whose claimed in their study that, people look for cues that suggest the validity of reviews based on its content such as experiential reviews which focuses on the reviewers' own experience in using or buying the product. See further details on the list of partial evidence supporting that the online shoppers' eager to find out about other users' experience while conducting their online shopping activity.

    Example of Primary Research evidence:

"For example, if I buy electrical stuff, it's quite hard to tell unless you have been using it or buying it previously so yeah I will look into reviews to find out people's experience of using the stuff."

(Online shopper 19)

2. Product Quality

Based on the literature findings, Etzion and Awad (2007) have discovered in their study that the customer reviews play an important role as a mean of communication among customers about the quality of the product. That shows how people looked for information regarding the quality of product through the customer reviews because to them, that was the one communication medium where they can get such information. The further details will present more evidence of the second key information; quality of the product, as mentioned in the Primary Research.

Example of Primary Research evidence:

"I started to look for reviews because we must know what this product reviewed by others, either this is a good quality product or bad quality products."

(Online shopper 22)

3. Customer Service

In the literature, there was a statement by Ye et al. (2014), saying that the online customer reviews provide information on various aspects of products inclusive the customer service. Thus, the following will present the evidence that indicates the term customer service in the responses of the Primary Research participants.

Example of Primary Research evidence:

"When I read reviews, what I concern the most is customer service. For me, it is very important because if anything happens to my purchases, I know how the customer service will handle it."

(Online shopper 10)

4. The fourth key dimension is the value for money. According to Ye et al. (2014), in her study, the findings showed that online customer reviews provide information on from the various aspects of products importantly on the value for money. The details in the following show partial evidence from the online shoppers' experience about finding the value for money information in the customer reviews.

Example of Primary Research evidence:

"What I like about the review is it is well explained about the durability of the leather which is not easily got scratch, what departments does the bag have and what sort of stuff that we can put in the bag. This is the most important part of the review about the handbag because I want my money worth to buy that bag."

(Online shopper 5)

5. The last key information dimension discovered in Primary Research is a recommendation. Referring to the study by Ganu et al. (2009), assessing and searching text reviews, however often frustrating when users only have a vague idea of the product; hence, people need recommendation reviews. The following details will present a few quotes from the online shoppers claiming the need to refer to the recommendation reviews by other purchasers to equip their minds before deciding on the online purchases.

Example of Primary Research evidence:

"I read a lot of reviews because I need to know whether the lunchbox is reliable or not because it cost either quite cheap at around thirty over ringgit Malaysian. I read about the recommendation".

(Online shopper 14)

In the literature, there were a few papers (Etzion and Awad (2007), Ganu et al. (2009) and Ye et al. (2014)) discussed and revealed the types of information that people looked for when they were referring to the customer reviews. However, the Ganu et al. (2009) paper, the study was not based on empirical evidence. The study discussed the technical aspect of MAXent-LDA Hybrid and Unsupervised Aspect-Sentiment Model on mathematical

325

solutions to organise and extract customer reviews content. While the other two studies by Ye et al. (2014) and Etzion and Awad (2007) were on business-based studies on the travel industry. Hence the reviews were about reviews of the travellers.

However, the findings of this study turned out to support the findings of the reviews by the travellers as well. It means, despite those key dimensions of information discovered in traveller's reviews site, it is also applicable to the product-based reviews where the participants of this study, who were online shoppers, were looking for product-based reviews, which presented the same key information dimensions of reviews; Use Experience, Value for Money, Product Quality, Customer Service and Recommendation. Through those literature findings and this study's findings, have confirmed and supported that the online shoppers (as in the literature reviews and user studies) were really looking for the five kinds of information when engaging in the online shopping activity as well as referring to the customer reviews. The following furthers on the next discussion about the User Evaluation Phase 1 and Phase 2.

8.4 Discussion of Results in Prototype User Evaluation Phase 1

There were two stages of evaluation process done in this study. Firstly, because this study intended to establish the attitude responses from the potential users of the customer review system with tags. That is why the study established the User Evaluation phase 1 first before doing the User Evaluation Phase 2 on real-use data. The next discussion will further discuss the selection of TAM as the framework in User Evaluation Phase 1 to measure the attitude responses of the online shoppers/ users of customer reviews system. And then, further to the discussion of the results from the User Evaluation Phase 1 that used the TAM as the evaluation framework.

8.4.1 Using TAM as the Framework for Prototype System Evaluation

Why use TAM? This study selected TAM or Technology Acceptance Model because this study is a research on Information System (IS) and there is a development of a technology on managing the information systems called the Tags and Tagging system. This study developed the Tags and Tagging system based on the empirical evidence gathered through a series of Ethnographically-Informed Observation User Studies. After the development of the Tags and Tagging system was completed, to the next step was to measure or test it.

There came the TAM as the framework for testing the system concept. The selection was because as according to Legris et al. (2003), the TAM is a widely used model to be used in IS (information system) based study because the model is simple and easy to understand. Since some studies are based on IS have deployed and used the TAM as the framework of evaluation, this study thus found that the use of the model can evaluate acceptance level of the potential users can be measured. The two constructs; Perceived Useful and Perceived Ease of Use have been broadly used in empirical studies to generate statistical data for data analysis (Venkatesh and David 2000).

8.4.2 The result of User Evaluation Phase 1 based on TAM Framework.

Drawing on the use of TAM as the evaluation framework for the tags and tagging concept system has revealed that two of the TAM constructs; the perceived usefulness and perceived ease of use have displayed the presence of impacts that is seemed as significant and straightforward on the attitudes of the users. The impacts were towards the adoption of the Tags and Tagging concept in organising and presenting online customer reviews and an indirect impact which was observed on their behavioural intention to use the Tags and Tagging based online customer reviews system. In the findings, it was also indicating the overall attitude towards Tags and Tagging concept has somewhat facilitated the relationship between the acceptance of the concept and also the behavioural intention to use it. The significant impacts have yielded to the results suggested that the users or online shoppers are likely to use and accept the Tags and Tagging concept when it is useful and easy to be used.

Furthers are a detailed discussion on overall acceptance of Tags and Tagging concept based on two different constructs; Perceived Ease of Use and Perceived Usefulness. Adding the point to support the selection of TAM as the framework apart from the results obtained was, according to the literature, the TAM framework is among the popular tools to be used to measure the level of user acceptance.

8.5 Discussion on the User Evaluation Phase 2 Results and Findings

The following discussion details will further explain the results and findings were obtained in the User Evaluation Phase 2. More importantly, this discussion too, will provide the evidence of the advantages of Tags as explained in various studies (Chen et al. (2009), Lee et al. (2007) and Trant

(2008)) have demonstrated the benefits of Tags as imposed and presented in each points below (from the point 8.6.1 to the point 8.6.5). Each point presented contradictory literature evidence on Tags and supported by various findings from the real-use Evaluation Phase 2 results.

8.5.1 Tags and Tagging System Allows Time-Saving Information Search Process through Customer Reviews. (Chen et al. 2009)

Example of User Evaluation Evidence:

- **Save more time**

The other change that the users have experienced when using this customer reviews system with tags is, it saves more time. Thus, the following are some examples of a user claiming that the concept of the tag makes them save more time in finding information in customer reviews.

> *"I strongly feel that using this system saves me more time. No longer process is needed, and I quickly got the information I wanted to get Because I don't need to open all reviews and simply select what tag and what reviews I want to read so be it.."* *(Online shopper 10)*

8.5.2 Tags and Tagging System Provides Neat Organisation and Presentation of Customer Reviews. (Lee et al. 2007)

Example of User Evaluation Evidence:

- **Organised**

There is a good point of organised reviews from the users themselves where the Tags concept also created a new systematic approach on putting suitable reviews on the suitable categories or tags.

*"All right, this method is actually good, you know, it created a new systematic approach for the users like me to be careful on putting my reviews on the suitable tags. This is because, it will be good if we can put our reviews on the relevant tags because we as readers too, rather prefer if the reviews are **organised** and really be at the tags where it supposed to be"*

<div align="right">

(Online shopper 22)

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Not only that, but the Tags concept has also encouraged the users to be more organised in terms of planning what to write in the reviews. This is because the users will carefully draft their reviews and only put relevant points to avoid the reviews being too long with a less relevant and robust point on it.

*"Having this approach of tags to classify our own reviews is undoubtedly beneficial because it requires the users to plan on what to put in the review writing properly. And then, it makes the reviewers being careful, and I myself need to be careful when writing a review. Make sure it is **organised** and contained relevant points to the tags."*

<div align="right">

(Online shopper 19)

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8.5.3 Tags and Tagging System Controls the Scope of Customer Reviews Contents and Make Information Search Easier and Simpler. (Trant 2008)

Example User Evaluation Evidence:

- **Easier to find information**

Easier to use is one of the principal codes directly mentioned several times by the respondents. The majority of the users deliberately shared and explained their experience of using the system as easy to use. The further details of the responses came up and were mentioning and elaborating how **easier to use** the system of reviews with tags is.

" What more goodness was the item is on sale in Argos now, and I just got it yesterday. **What I can conclude is, the tags make the system** easier to use **for me to reach every kind of information from other users with a single click on the tags**.*"*

<div align="right">

(Online shopper 15)

329

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Further is a response from one of the participants whom favourably said the system is **simpler** to use. The user has explained a long story of her experience on using the customer reviews system with tags.

> *" I found the review in this system is much organised. I mean you go to Value of Money tag, the reviews got the points of value for money. Easy to spot on. I felt it was a bit quick for me when I went through the reviews.* ***Unlike the last times, I felt the time was taken so long until I felt satisfied with what I know. So, this system. Yeah, it got tags, and the tags are easy and*** *simpler to use.* *What else is good? Oh yeah, the number of tags and the colour-coded used are very minimal yet interactive enough. After all, using this system is easy, not complicated at all, save time and the best part, it's not tiresome!"*

> *(Online shopper 16)*

8.5.4 Tags and Tagging System Allows User to find and Filter Relevant Customer Reviews based on Their Preferences and Needs. (Lee et al. 2007)

Example of User Evaluation Evidence:

Below is one example of where the participant mentioned how she could find the information about the customer service **straight-away**;

> *"The information on customer service is very good for me to hear, and I even glad when* ***I can*** *straight away* ***found the information from this tag****, **Customer Service tag**. I'm really impressed. This system works so good in my opinion"*

> *(Online shopper 4)*

The other response appeared that mentioned a **straightforward** keyword to describe his process of retrieving reviews using the system prototype with tags.

> *"I like things that are direct and straightforward. At first, I feel curious when I first saw this system concept. Why there were so many tags? But as I scrolled and selected one by one tag,* ***I started to feel that this system is easy to use because the tags are*** *straightforward* ***in terms of describing what the reviews inside are about..."***

8.5.5 Tags and Tagging System Puts Focus on Content and Provide Useful Information (Chen et al. 2009).

Example of User Evaluation Evidence:

- **Provide Useful information**

And now the chapter moves to another code which is Usefulness or Useful; both have the same meaning. The following are the quotes from the users mentioning the keywords that mean useful or usefulness, whether directly or indirectly.

> *" So this is where I found these tags work wonder.* **Because the tags helped** to provide useful information **to guide the review readers to absorb so much information on preferences.** *As for me, I like to know firstly about the quality, then value of money and lastly the recommendation. To me, if the products got so many recommendations, it means the product is good. Besides, there were details in the recommendation reviews section.* **That is where too, I found the** useful information **because I could know the justification of their recommendations.** *That is what my experience was when using this system."*

> *(Online shopper 2)*

Then some of the users too, often found this Tags concept is useful when it comes to making a recommendation to friends, families and parents about what items should they buy. For example, this one user, usually, according to him, he was the one who needs to read reviews and make product study for the parents, but this time, he can lead the parents to use the system by themselves. Because it is easy to use and the information in the customer reviews are found useful for the reference.

> *" **So when my mom and dad first use the system, they said it is a very** useful reference **and easy to use because the interface is simple, and contents are specific and not like other systems where the reviews look so long like a fiction novel.***"*

> *(Online shopper 23)*

Other than that the users also have stated that the tags system is found useful because then tags contained relevant information which means, when the users click on any of the tags, it will lead the user to a set of relevant customer reviews where she can refer to.

> *"I could not agree more about this system is so relevant because it* contained useful reviews *to me when I want to find relevant reviews to my preferences. Although there are tags that categorised the contents, the tags are not too many and still within my reach. ".*

> *(Online shopper 8)*

8.6 The Limitations of Study

There are limitations of ethnographic research that need consideration. During the observations, participants might present an ideal behaviour or tell the researcher what they think the researcher would like to hear Although this limitation can affect the attempt to provide an accurate description, this limitation usually occurs at the initial stage of the research. Thus, Burns (1994) suggests the researchers not to accept too readily the validity of initial impression. Another way to avoid this problem is by treating the participants, not a research subject. Researchers must interact with the participants in a natural and non-threatening manner.

Another limitation of the ethnographic research is that it is usually a field study from a particular setting so the result might only apply to that single setting. Therefore, it is difficult to generalise the findings of ethnographic research. This limitation can be overcome by using a procedure to enhance the external validity such as the inter-rater reliability and validity checks (which were already done). Another primary advantage of ethnography is it is an observational technique that allows the subjects to record their behaviour as it occurs. Furthermore, it will uncover and thoroughly describe the situations in a community. The last advantage of ethnography research is to understand the situational understudy from the perspective of those being studied. Therefore, the finding is more real than research that manipulates variables by using external experiments.

Unlike other research approaches that require the researcher to specify the research question, ethnography calls for a general statement. Thus, the research question in ethnographic research has a lack of specificity.. It does not contain a phrase which shows a cause-effect relationship but

only a neutral statement. It can be seen that ethnographic research avoids a statement that will lead to a particular interpretation. According to Wiersma (1986), the absence of the specificity is resulted by the characteristic of ethnography, which is non-anticipated research. If researchers provide a specific research problem, their interpretation of the observed phenomena is influenced by the specificity in the research question. The research question in ethnographic research also implies that the research focuses on the process of behaviour in a community and the interaction among members of the community.

Therefore, the online customer reviews studies, which show the process of reference among members of the online shoppers and the contents of customer review, may gain benefits from ethnographic research.

8.7 Methodology and Data Triangulation as the Validity Check of this Qualitative Study

As this study is a qualitative based study, conducting primary research needed to use data triangulation in order to validate the study. Hence this study conducted data triangulation by complementing two types of data sources to support the findings of the study. This study used Questionnaire Data, Interview Data and Video Observation Data to validate the findings by supporting each source of evidence gathered. The findings in the Primary Research have been successfully supported by the findings from the literature as reported in the earlier discussion chapter. Both sources of data yielded the results and findings regarding the influence of customer reviews toward online purchases decision and also yielded the findings of the five key information dimensions in customer reviews developed and generated from the Primary Research.

As for the methodology triangulation, this study triangulated two methodologies of system user evaluation which are the Quantitative Approach; Questionnaire and two (2) Qualitative Approaches; Interview and Video Observation The Results and Findings from both approaches (attitude and real data) have yielded to the evidence that the real users accept the Tags and Tagging concept.

8.8 Credibility, Transferability, Dependability and Confirmability as Quality and Validity Tool

Lastly, this qualitative study managed to develop research validity and quality by establishing trustworthiness throughout the processes involved. The trustworthiness can be evaluated in four (4) criteria. The first criterion is credibility and the credibility of this research is developed through truth value. The truth value is represented by prolonged engagement between the researcher and the participants as some of them engaged from the first user study until the user evaluation study. In-depth interviews with the participants and using direct quotes from the participants when describing the findings of this study also contributed to establishing credibility. The sampling technique also played an important role in establishing the credibility of this study where each study designed with different approaches to sampling in order to ensure each study received the most suitable participants with valid and reliable data received from them.

The second criterion is transferability. It was achieved via applicability of the methods used in this study. This study has proven the procedures and technique used in the primary research could generate and gather the same result within different research settings. Also, the analysis techniques (NVivo coding, thematic and tools such as MAXQDA and NVivo data analysis software) used for analysing the primary research data also proved to produce meaningful and reliable analysis results. Another proof is that the observation findings of both phases of user studies had common findings: especially in regard to information types and behaviours of the online shoppers. The third factor is dependability where it was achieved by establishing consistency. The consistent methods and techniques used to analyse the rich qualitative and quantitative data has successfully presented the final outcome of this study, the tags and tagging concept with five key dimensions of information in reviews. Lastly is the confirmability aspect and it was achieved through triangulation method applied while processing and analysing the data as explained in detail in the previous section. From all four aspects of trustworthiness of qualitative research, it also has supported that this study has a transferability criteria providing all the methods and techniques deployed throughout this research.

Chapter 9

Conclusion

9.1 The Achievement of Research Objectives

1)   To conduct ethnographically-informed observation user studies to;

- Understand the online shoppers' behaviours when using customer reviews. (Achieved via Exploratory User Study and Primary Research evidence and findings)
- Investigate the key information dimensions they referred to when using customer reviews. (Achieved via Primary Research evidence and findings)

2)   To conduct a literature and technology review to analyse the current view of the organisation and presentation of online customer reviews. (Achieved via the literature reviews presented in Chapter 2)

3)   To analyse user study data through data coding and inter-coder reliability to generate tags. (Achieved via Inter-Rater Reliability and Validity Checks on data coding results from the Primary Research).

4)   Based on user studies, to develop a conceptual prototype on organising and presenting customer reviews to provide proof of concept. (Achieved via the development of system prototype on offline and online versions)

5)   To evaluate users' attitude and actual use of the prototype to;

- Ensure good usability. (Achieved via evidence of User Evaluation Phase 1 and 2 results and findings)

- Produce data about real use. (Achieved via evidence of User Evaluation Phase 2 results and findings)

9.2 Analysing and Organising the Customer Reviews Presentation to Support the Online Purchasing Experience

Searching for information is the very first step taken during the consumer buying process, and therefore consumers need to have enough information on products or services they intended to get (Ha and Hong-Youl 2002). This entire study was about finding a new alternative from other existing systems that could be introduced and implemented to aid the online shoppers or consumers in finding information that fit their needs by knowing the focus of the information's content. Thus, the discussion on the above points regarding the advantages of tags has been supported by the evidence presented in user evaluation phase 2 based on the real-use of the tags system concept. Starting with the first user study (which was a quantitative survey study) that has provided result which claimed that the online customer review is the second factor that influences online shopper's decision making. Then the study continued into primary research in two phases. The first phase was intended to find out if there was an engagement between online shoppers with customer reviews. Based on the result supported by the real data collected from online shopping recordings, there was customer review involvement that influenced online shoppers. The second phase was intended to go for a bigger scope: do the customer reviews also involve online browsing? (Which is not necessarily online shopping). The results have supported that customer reviews, again, have been involved in online shoppers online browsing and also online purchasing activities. And from the second phase, the observation went further about which type of information can be regarded as important to online shoppers when the customer reviews are looked into. Based on the result, the study used inter-rate reliability test to which finally produced 5 key dimensions of important information in customer reviews; User Experience, Product Quality, Value for Money, Customer Service and Recommendation.

Afterwards, the study continued with the development of a system prototype to demonstrate the existing method of organising customer reviews which are tags. The method observed existed in both academic research and technology reviews where it was founded on service-based reviews such as in the tourism industry. Therefore, this study applied the same method with a different approach use on utilising the method, which is applying the intelligence of users. The new concept or method developed (the tags and tagging concept) has proven to be successful in organising and presenting the information in the customer reviews, distinctly into the five (5) key categories mentioned above.

The prototype system that demonstrated the Tags and Tagging concept were evaluated in two form; Quantitative; Questionnaire and Qualitative; Video Observation and Interview. Both types of evaluation have produced a good level of acceptance by the real online shoppers supported by the results discussed in Chapter 6 and 7. To sum up, in Quantitative evaluation, the users who are familiar with using customer reviews, has indicated good acceptance of Tags and Tagging concept. In Qualitative evaluation, the users who are familiar in both retrieving and writing reviews were also indicated good acceptance towards the Tags and Tagging concept. Based on the evaluation results as well, the 5 key dimensions illustrated in the Tags and Tagging concept has supported that the new method of organising and presenting the customer reviews received a good level of acceptance.

Lastly, the method used, the Ethnographically-Informed Observation Study that sought for and analysed real data from real online shoppers 'point of view, has proven to be a practical and suitable research strategy to produce a set of information that acclaimed to be important by most of Malaysian online shoppers (majority of the participants); User Experience, Product Quality, Value for Money, Customer Service and Recommendation. The new method produced, the Tags and Tagging concept is also proven to be easy to use and useful in organising and presenting the customer reviews that support the online purchases activity based on the evaluation results from the real online shoppers as the respondents.

To sum up, this study has provided sufficient evidence to support that, by analysing and organising the customer reviews presentation, it has supported the online purchases experience when the real online shoppers claimed that the five (5) key categories of reviews; User Experience, Product Quality, Value for Money, Customer Service and Recommendation in the Tags and Tagging concept, are easy to be used and useful for them in finding important and relevant reviews.

9.3 Contributions to the Study

There are two forms of contributions to the study

- Methodological Contribution: This interdisciplinary study has brought Ethnographically-Informed Observation user studies approach can be a formative system design to base the design in a strong empirical understanding of world behaviours. This approach is unusual in this area but proven to be a valuable and practical method. Besides, the rich data gathered from the ethnographic-based

user studies has provided some rich insights too regarding which information is claimed as important for online shoppers. Hence, the result of developing the five (5) key information dimensions of online customer reviews from the Primary Research; User Experience, Value for Money, Product Quality, Customer Service and Recommendation, is the features developed in the Online Customer Reviews with Tags Prototype System. The prototype system is the form of IS development in this study.

- Empirical Contribution: This study already has empirical proof of Tags and Tagging concept through attitude data and real-use data on Technology Acceptance Model evaluation on the implementation of the offline system. The empirical proof revealed that there is good potential user acceptance. Besides, it provided another, stronger intended proof of concept through the implementation of an online system with a real-world evaluation with online shoppers. Based on the evaluation results, there was empirical evidence of user acceptance towards the Tags and Tagging system introduced and proposed in the Online Customer Reviews Prototype System. Besides the concept that does not use machine learning techniques or mathematical based algorithm, but rather promoting the use of user-intelligence to work the concept of Tags and Tagging for searching relevant reviews.

9.4 Conclusion

This research is about analysing and organising customer review content through conducting the Primary Research. The findings generated the five key dimensions of information in customer reviews. The five key dimensions were used as the tags feature in the prototype system of online customer reviews with tags. The system prototype was being evaluated in two phases (attitude and real data). The result of user evaluation developed the evidence of good usability of the prototype system. Ideally, the results support that the Tags and Tagging concept controls the scope and sort the information in reviews and also aids the users to find relevant reviews. Therefore, the results of the final evaluation answered the research question by presenting that the analysing and organising works done in Primary Research, has supported the online purchases experience. The evidence was presented in the results of what the Tags and Tagging concept development have achieved.

The use of the Ethnographically-Informed Observation Methodology User Study series has successfully presented the evidence. The evidence has yielded to answer the research question by providing rich, deep and meaningful results. The study had examined the broad choices of research methodologies and data collection methods. Then, came to the decision to adopt the Ethnographically-Informed Observation Methodology and the mixed data collection methods, Qualitative and Quantitative. Questions of the validity of the findings in the Primary Research and findings in Qualitative User Evaluation have been addressed successfully by conducting data and methodology triangulations alongside other external validity assessment such as Inter-rater Reliability and Validity checks, the external and internal validity checks on the questionnaire design.

This study has fulfilled the gap of studies where it has sufficiently been able to provide a set of information that claimed as important among online shoppers when conducting online shopping or browsing in the scope of Malaysian online shoppers since the majority of the input contributors are from that group. Even though the study aimed to get more varied data but having the majority of Malaysian online shoppers was enough to reflect attitude and needs of Malaysian online shopper. Besides, this study has successfully filling the study gap by providing evidence that using non-machine learning based or algorithm based technique, the study managed to produce a new technique or method for organising and presenting reviews that based on user-intelligence.

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Appendices

List of Appendices

The Data Set for Priori Coding

The Data Set for Emerging Coding

The Consent Form of User Study

The Questionnaire Set for User Evaluation Phase 1

SUPPORTING ONLINE PURCHASES BY ANALYSING AND ORGANISING CUSTOMER REVIEWS

A DATA SET FOR CONTENT ANALYSIS

(PRIORI CODING):

CODING STATEMENTS BASED ON TYPES OF INFORMATION IN CUSTOMER REVIEWS

Prepared by

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The types of information codes in customer reviews and what it represents of;

USER EXPERIENCE   -The experience of buyers in;

          -Dealing with sellers

          -Using products bought
          -Their purchasing process

PRODUCT QUALITY   -The quality of product in terms of;

          -Features or physical appearances such as size,   materials used, looks,

          -Characteristics such as durability, reliability,   feasibility, functionality, aesthetics (match with user preferences), performance

          -Contents such as music, videos, book,

          -General comment about the product as a whole

VALUE OF MONEY   -The worthiness factor of money spent on buying the products and value driven from the purchasing

CUSTOMER SERVICE   - The serviceability offers from sellers such as;

          -Delivery services and charges

          -Competencies of service provided to customers   (when products break down)

          -Return policy

RECOMMENDATION   -Suggestions made to other buyers from previous buyers based on their experiences

Based on the ethnography user study conducted which analysed the online shopping behaviours through videos and interviews, there is a set of twenty (20) statements from the participants about the contents in customer reviews.

Using the information stated above as guidance, highlight or circle which type of information code that each statement below was referring to. Please select ONLY ONE code and its sub code.

Statement 1	Information codes;	Sub codes;
		Dealing with sellers
	USER EXPERIENCE	Using products
		Purchasing process

		Features (eg; size, looks, materials, weight, etc)
"In this food review blog, it mentioned that the signature and must try is their white coffee and also the chicken Kueh Tiow as the first choice of the consumer"	PRODUCT QUALITY	Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, book, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

	RECOMMENDATION	Not to buy this product or from this seller
		Buy from other brands or other sellers
	VALUE OF MONEY	Worth the money spent
		Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐ Yes, I am happy with the code / sub code

☐
        No, the better code / sub code would be _____

Statement 2	Information codes;	Sub codes;
		Dealing with sellers
	USER EXPERIENCE	Using products

		Purchasing process
"Here I found that most of the buyers are unhappy and It is recommended to buy other brands of cooker hood filter that offer great thick"	PRODUCT QUALITY	Features (eg; size, looks, materials, weight, etc)
		Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, book, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

	RECOMMENDATION	Not to buy this product or from this seller
		Buy from other brands or other sellers
	VALUE OF MONEY	Worth the money spent
		Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐ Yes, I am happy with the code / sub code

☐

No, the better code / sub code would be _____

Statement 3	Information codes;	Sub codes;
		Dealing with sellers
	USER EXPERIENCE	Using products

		Purchasing process
"I found some reviews that claimed the cooker hood filter is not thick enough and so thin"	PRODUCT QUALITY	Features (eg; size, looks, materials, weight, etc)
		Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, book, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

	RECOMMENDATION	Not to buy this product or from this seller
		Buy from other brands or other sellers
	VALUE OF MONEY	Worth the money spent
		Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐ Yes, I am happy with the code / sub code

☐

No, the better code / sub code would be _____

Statement 4	Information codes;	Sub codes;
	USER EXPERIENCE	Dealing with sellers
		Using products

		Purchasing process
''From the review I found out more about the product, its smell, how it is good as body scrub, is it moisturizing and I keen to find more good features about the product''	PRODUCT QUALITY	Features (eg; size, looks, materials, weight, etc)
		Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, book, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

	RECOMMENDATION	Not to buy this product or from this seller
		Buy from other brands or other sellers
	VALUE OF MONEY	Worth the money spent
		Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐   Yes, I am happy with the code / sub code

☐

     No, the better code / sub code would be _____

Statement 5	Information codes;	Sub codes;
		Dealing with sellers
	USER EXPERIENCE	Using products

		Purchasing process
"I'm looking from the review whether it is worth my money, whether the product is considered cheap and if it is good, I will definitely buy the product"	PRODUCT QUALITY	Features (eg; size, looks, materials, weight, etc)
		Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, book, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

	RECOMMENDATION	Not to buy this product or from this seller
		Buy from other brands or other sellers
	VALUE OF MONEY	Worth the money spent
		Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐ Yes, I am happy with the code / sub code

☐
        No, the better code / sub code would be _____

Statement 6	Information codes;	Sub codes;
		Dealing with sellers
	USER EXPERIENCE	Using products

		Purchasing process
"You Tube is one of my main source of product review because I like watching rather than just reading them. It gives me clearer insight of the products and normally reviews tell more from real experience of product usage and so forth"	PRODUCT QUALITY	Features (eg; size, looks, materials, weight, etc)
		Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, book, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

		Not to buy this product or from this seller
	RECOMMENDATION	Buy from other brands or other sellers
		Worth the money spent
	VALUE OF MONEY	Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐ Yes, I am happy with the code / sub code

☐
No, the better code / sub code would be _____

Statement 7	Information codes;	Sub codes;
		Dealing with sellers
	USER EXPERIENCE	Using products

		Purchasing process
"I concern a lot about their customer service especially on the delivery charges. That is why I like Lazada because it's always free delivery charges"	PRODUCT QUALITY	Features (eg; size, looks, materials, weight, etc)
		Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, book, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

	RECOMMENDATION	Not to buy this product or from this seller
		Buy from other brands or other sellers
	VALUE OF MONEY	Worth the money spent
		Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐ Yes, I am happy with the code / sub code

☐

No, the better code / sub code would be _____

Statement 8	Information codes;	Sub codes;
		Dealing with sellers
	USER EXPERIENCE	Using products

		Purchasing process
''The video review explained well about the durability of the leather which is not easily got scratched, what compartments does the bag has and even show all sort of stuff that we can put in the bag''	PRODUCT QUALITY	Features (eg; size, looks, materials, weight, etc)
		Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, book, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

	RECOMMENDATION	Not to buy this product or from this seller
		Buy from other brands or other sellers
	VALUE OF MONEY	Worth the money spent
		Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐ Yes, I am happy with the code / sub code

☐

No, the better code / sub code would be _____

Statement 9	Information codes;	Sub codes;
	USER EXPERIENCE	Dealing with sellers
		Using products

		Purchasing process
"Yes usually I read on consumer review because from the description and picture, it didn't show what's in the book, not in detail. But in consumer review, sometimes there is precise information about the book's content like does the book has a lot of exercises	PRODUCT QUALITY	Features (eg; size, looks, materials, weight, etc)
		Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, book, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

or is it more on *formulas only?"*	RECOMMENDATION	Not to buy this product or from this seller
		Buy from other brands or other sellers
	VALUE OF MONEY	Worth the money spent
		Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐ Yes, I am happy with the code / sub code

☐

No, the better code / sub code would be _____

Statement 10	Information codes;	Sub codes;
"I did *straightway go*	USER EXPERIENCE	Dealing with sellers
		Using products

		Purchasing process
to customer review because Kindle usually is not cheap and the moment I saw the price of 49 pound I wonder was it really good to be true and I went straight to the customer review to see how trusted this seller is and so the item and I managed to be convinced because there were over a thousand of people giving 5	PRODUCT QUALITY	Features (eg; size, looks, materials, weight, etc)
		Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

		Not to buy this product or from this seller
stars for this product and I immediately bought it".	RECOMMENDATION	
		Buy from other brands or other sellers
	VALUE OF MONEY	Worth the money spent
		Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐ Yes, I am happy with the code / sub code

☐

No, the better code / sub code would be _____

Statement 11	Information codes;	Sub codes;
		Dealing with sellers
	USER EXPERIENCE	Using products

		Purchasing process
"Nothing specific that I'm looking for but just a general experience because when people write reviews it is whether the product is really good, outstanding or it is very poorly and these are the things that I should look out for and I don't have anything in mind.".	PRODUCT QUALITY	Features (eg; size, looks, materials, weight, etc)
		Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

	RECOMMENDATION	Not to buy this product or from this seller
		Buy from other brands or other sellers
	VALUE OF MONEY	Worth the money spent
		Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐   Yes, I am happy with the code / sub code

☐

No, the better code / sub code would be _____

Statement 12	Information codes;	Sub codes;
		Dealing with sellers
	USER EXPERIENCE	Using products

		Purchasing process
"Like this Kindle seller, seems that the positive reviews outweigh the negative reviews, means people are satisfied with their purchasing"	PRODUCT QUALITY	Features (eg; size, looks, materials, weight, etc)
		Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

	RECOMMENDATION	Not to buy this product or from this seller
		Buy from other brands or other sellers
	VALUE OF MONEY	Worth the money spent
		Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐ Yes, I am happy with the code / sub code

☐

No, the better code / sub code would be _____

Statement 13	Information codes;	Sub codes;
		Dealing with sellers
	USER EXPERIENCE	Using products

		Purchasing process
"I must look on review from other buyers to know how long this warmer bag could keep the bottle warm"	PRODUCT QUALITY	Features (eg; size, looks, materials, weight, etc)
		Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

	RECOMMENDATION	Not to buy this product or from this seller
		Buy from other brands or other sellers
	VALUE OF MONEY	Worth the money spent
		Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐   Yes, I am happy with the code / sub code

☐

        No, the better code / sub code would be _____

Statement 14	Information codes;	Sub codes;
		Dealing with sellers
	USER EXPERIENCE	Using products

		Purchasing process
"I found good extra information from reviews about how easy for baby to switch from milk bottle to training cup using interchangeable lid"	PRODUCT QUALITY	Features (eg; size, looks, materials, weight, etc)
		Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, book, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

	RECOMMENDATION	Not to buy this product or from this seller
		Buy from other brands or other sellers
	VALUE OF MONEY	Worth the money spent
		Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐   Yes, I am happy with the code / sub code

☐

No, the better code / sub code would be _____

Statement 15	Information codes;	Sub codes;
		Dealing with sellers
	USER EXPERIENCE	Using products

		Purchasing process
''On eBay I always look on customer review because I'd like to know whether the seller is good and whether the item sent in a good condition. I also look for positive review and if there are many bad reviews, I won't buy from the seller.''	PRODUCT QUALITY	Features (eg; size, looks, materials, weight, etc)
		Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, book, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

	RECOMMENDATION	Not to buy this product or from this seller
		Buy from other brands or other sellers
	VALUE OF MONEY	Worth the money spent
		Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐ Yes, I am happy with the code / sub code

☐

No, the better code / sub code would be _____

Statement 16	Information codes;	Sub codes;
		Dealing with sellers
	USER EXPERIENCE	Using products

		Purchasing process
''I think in Amazon, those with high positive reviews will come first at the top. I look at the percentage of how many positive reviews there are for that product and it gives me clearer idea about how good or bad the product''	PRODUCT QUALITY	Features (eg; size, looks, materials, weight, etc)
		Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, book, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

RECOMMENDATION	Not to buy this product or from this seller
	Buy from other brands or other sellers
VALUE OF MONEY	Worth the money spent
	Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐ Yes, I am happy with the code / sub code

☐

No, the better code / sub code would be _____

Statement 17	Information codes;	Sub codes;
		Dealing with sellers
	USER EXPERIENCE	Using products

		Purchasing process
"Yes, I do read reviews because here usually people when they buy the product and they are not as what they expected, they will bash the product. They have touched and bought it so their reviews normally reveal the true experience about using the product".	PRODUCT QUALITY	Features (eg; size, looks, materials, weight, etc)
		Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, book, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

392

	RECOMMENDATION	Not to buy this product or from this seller
		Buy from other brands or other sellers
	VALUE OF MONEY	Worth the money spent
		Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐ Yes, I am happy with the code / sub code

☐

No, the better code / sub code would be _____

Statement 18	Information codes;	Sub codes;
		Dealing with sellers
	USER EXPERIENCE	Using products

		Purchasing process
"I believe that top listed sellers are usually good and trusted seller with many positive reviews".	PRODUCT QUALITY	Features (eg; size, looks, materials, weight, etc)
		Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, book, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

	RECOMMENDATION	Not to buy this product or from this seller
		Buy from other brands or other sellers
	VALUE OF MONEY	Worth the money spent
		Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐ Yes, I am happy with the code / sub code

☐

        No, the better code / sub code would be _____

Statement 20	Information codes;	Sub codes;
		Dealing with sellers
	USER EXPERIENCE	Using products

		Purchasing process
"The price is really cheap for a kit set like this"	PRODUCT QUALITY	Features (eg; size, looks, materials, weight, etc)
		Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, book, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

	RECOMMENDATION	Not to buy this product or from this seller
		Buy from other brands or other sellers
	VALUE OF MONEY	Worth the money spent
		Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐ Yes, I am happy with the code / sub code

☐

No, the better code / sub code would be _____

Statement 21	Information codes;	Sub codes;
		Dealing with sellers
	USER EXPERIENCE	Using products

		Purchasing process
"Because I am not familiar with this product so I need to read review to know whether most buyers were happy with the products"	PRODUCT QUALITY	Features (eg; size, looks, materials, weight, etc)
		Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, book, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

	RECOMMENDATION	Not to buy this product or from this seller
		Buy from other brands or other sellers
	VALUE OF MONEY	Worth the money spent
		Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐ Yes, I am happy with the code / sub code

☐

No, the better code / sub code would be _____

Statement 22	Information codes;	Sub codes;
		Dealing with sellers
	USER EXPERIENCE	Using products

		Purchasing process
"I want to know were there any drawbacks or disadvantages of that particular design of the training cup which vary by brands"	PRODUCT QUALITY	Features (eg; size, looks, materials, weight, etc)
		Characteristics (eg; durability, functionality, etc)
		Contents (eg; music, film, book, etc)
		General comment (eg; good, bad, excellent, poor)
	CUSTOMER SERVICE	Delivery services & charges
		Repairing / Fixing service
		Return / Refund Policy
		To buy this product or from this seller

	RECOMMENDATION	Not to buy this product or from this seller
		Buy from other brands or other sellers
	VALUE OF MONEY	Worth the money spent
		Not worth the money spent

Are you happy with the code? What would be a better code / sub code? Please tick one.

☐ Yes, I am happy with the code / sub code

☐

No, the better code / sub code would be _____

SUPPORTING ONLINE PURCHASES BY ANALYSING AND ORGANISING CUSTOMER REVIEWS

A DATA SET FOR CONTENT ANALYSIS

(EMERGENT CODING):

CODING THE STATEMENTS BASED ON TYPES OF INFORMATION IN CUSTOMER REVIEWS

Prepared by

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Based on the ethnography user study conducted which analysed the online shopping behaviours through videos and interviews, there is a set of twenty (20) statements from the participants which talked about the information contents they found and read in customer reviews.

Using the examples given below as guidance, please **write an information code with a minimum of 1 word up to the maximum of 1 sentence** that best describe what all the statements are talking about or referring to. Please bear that the answers are not limited to only two (2) types of codes as shown in the examples. There are other information codes that you can put whichever best described the statements.

Examples:

Statement 1	Answer
"I did straightway go to customer review because Kindle usually is not cheap and the moment I saw the price of 49 pound I wonder was it really good to be true and I went straight to the customer review to see how trusted this seller is and so the item and I managed to be convinced because there were over a thousand of people giving 5 stars for this product and I immediately bought it".	This statement is about; 1 word: Recommendation OR 1 sentence : Recommendation to buy from this seller

Statement 2	Answer
'On eBay I always look on customer review because I'd like to know whether the seller is good and whether the item sent in a good condition."	This statement is about; 2 words: User Experience OR 1 sentence : User experience dealing with seller

Statement 1	Answer
''Here I found that most of the buyers are unhappy and It is recommended to buy other brands of cooker hood filter that offer great thick''	This statement is about;

Statement 2	Answer
"I'm looking from the review that says whether it is worth my money, whether the product is considered cheap."	This statement is about;

Statement 3	Answer
"You Tube is one of my main source of product review because I like watching rather than just reading them. It gives me clearer insight about the products and normally reviews tell more from real experience of product usage and so forth"	This statement is about;

Statement 4	Answer
"I concern a lot about their customer service especially on the delivery charges. That is why I like Lazada because it's always free delivery charges"	This statement is about;

Statement 5	Answer
"The video review explained well about the durability of the leather which is not easily got scratched, what compartments does the bag has and even show all sort of stuff that we can put in the bag"	This statement is about;

Statement 6	Answer
"Yes usually I read on consumer review because from the description and picture, it didn't show what's in the book, not in detail. But in consumer review, sometimes there is precise information about the book's content like does the book has a lot of exercises or is it more on formulas only?"	This statement is about;

Statement 7	Answer
''I must look on review from other buyers to know how long this warmer bag could keep the bottle warm''	This statement is about;

Statement 8	Answer
''Like this Kindle seller, seems that the positive reviews outweigh the negative reviews, means people are satisfied with their purchasing''	This statement is about;

Statement 9	Answer
''Nothing specific that I'm looking for but just a general experience because when people write reviews it is whether the product is really good, outstanding or it is very poorly.''	This statement is about;

Statement 9	Answer
"Yes, I do read reviews because here usually people when they buy the product and they are not as what they expected, they will bash the product. They have touched and bought it so their reviews normally reveal the true experience about using the product".	This statement is about;

Statement 10	Answer
''I found some reviews that claimed the cooker hood filter is not thick enough and so thin''	This statement is about;

Statement 12	Answer
''From the review I found out more about the product, its smell, how it is good as body scrub, is it moisturizing and I keen to find more good features about the product''	This statement is about;

Statement 13	Answer
''The price is really cheap for a kit set like this''	This statement is about;

Statement 14	Answer
"I believe that top listed sellers are usually good and trusted seller with many positive reviews".	This statement is about;

Statement 15	Answer
''In this food review blog, it mentioned that the signature and must try is their white coffee and also the chicken Kueh Tiow as the first choice of the consumer''	This statement is about;

Please fill up your details here;

AGE	
GENDER	
OCCUPATION	
NATIONALITY	
NATIVE ENGLISH SPEAKER?	YES / NO

Department of Computing

Coventry University

Coventry CV1 5FB

Informed Consent form

I would appreciate your assistance in this research project on the studies of consumer online shopping behaviour. This research will help me understand the consumer behaviour through real experiences of online shoppers.

All you need to do is recording your complete (until payment) online shopping activity in your own desirable length. If you do not wish to participate, simply discard this request. Responses will be completely anonymous; your name will not appear anywhere without your consent.

Keep this form for your records. If you have any questions regarding the research, contact me at the given details above. Thank you again for your help.

I will need to use data in any / all of the following ways. Please delete as appropriate:

a) I consent to being video-recorded **Yes / No**

b) I consent to video footage being used in coursework **Yes / No**

c) I consent to anonymous video images / transcripts being used in coursework **Yes / No**

d) I consent to anonymous video footage / images / transcripts possibly being used on web pages **Yes / No**

e) I consent to use of interview data for coursework **Yes / No**

f) I consent to anonymised data being used for publications and reports **Yes / No**

By signing this consent form, I confirm that I have read and understood the information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without cost. I will be given a copy of this consent form. I understand that completing and returning the video constitutes my consent and voluntarily agree to participate in this study.

_____   _____   _____

Name of Participant   Date   Signature

Address:
Email:

Many thanks!

UESTIONAIRE: PERCEIVED USEFULNESS, EASE OF USE & USER SATISFACTION ON CUSTOMER REVIEWS SYSTEM PROTOTYPE (CRP)

Name:	
Age:	
Gender:	

For each item identified below, circle your answer based on the given options.

User Background	
Are you an online shopper?	YES / NO
How often do you shop online in a year?	LESS THAN 6 TIMES / MORE THAN 6 TIMES
Do you usually use customer reviews in your online shopping activity?	YES / NO

For each item identified below, circle the number to the right that best fits your judgment of using the 'Tags & Tagging' concept in Customer Reviews System prototype (CRP).
Use the rating scale to select the quality number as indicated below;

1) Strongly Disagree 2) Disagree 3) Somewhat Disagree   4) Neither   5) Somewhat Agree 6) Agree 7) Strongly Agree

Perceived Usefulness	Scale						
The Tagging concept in CRP is useful							
Using CRP enables me to find & read reviews/information more quickly							
Using Tags gives me more control on what information I'm looking for							
Using Tags saves me time when looking on specific reviews/information							
Using Tags in CRP effectively organise relevant information/reviews							
I would find Tagging concept is useful in my information/reviews search process							

Perceived Ease of Use	Scale						
Learning to use & understand the Tagging concept in CRP is easy							
I would find it easy to get CRP do what I want it to do							
I would find it easy to get what information/reviews I want from the Tags							
I would find it is effortless to find specific information/reviews using Tags							
I would find Tags in CRP efficiently organise relevant information/reviews							
I would find Tagging concept is easy to use in my information/reviews search process							

User Satisfaction	Scale						
I am satisfied using CRP to find additional product information/reviews							
I would recommend friends to use CRP to find relevant customer reviews							
It is a fun and pleasant experience using CRP with Tagging concept							
I feel I need to have CRP in my information/reviews search activity							

Content removed on data protection grounds